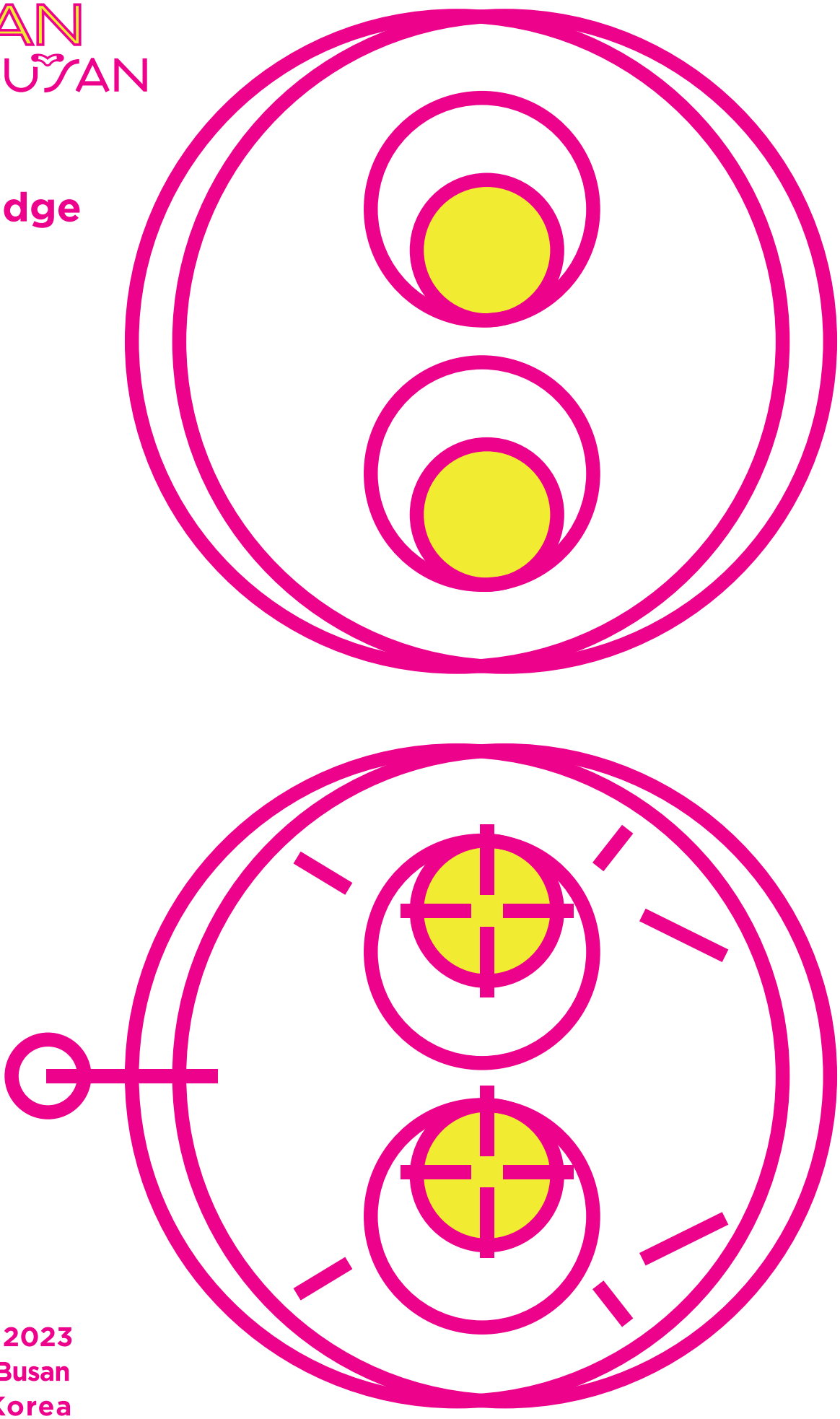
IEEE
RO-MAN
2023 BUSAN

Design a New Bridge for H-R-I



August 28-31, 2023
Paradise Hotel Busan
Republic of Korea

Sponsors

Diamond

HYUNDAI

KIST Korea Institute of Science and Technology

Gold

QUALISYS Motion Capture Systems

Robocare (주)로보케어

Global Human Resource Development for Innovative Design in Robot and Engineering

NOKOV Motion Capture

Silver

TWINNY

ROAS Robotics on Advanced Solution 주식회사 로 아 스

LG Electronics

XYZ

RAINBOW ROBOTICS

Bronze

AIDIN ROBOTICS

TESOLLO

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August 31, 2023

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Aug 28 (Mon) / Day 1

	Track T1 (Sicily, 1F)	Track T2 (Grand Ballroom, 2F)	Track T3 (Capri, 2F)	Track T4 (Sydney, 2F)
09:00-12:00 (180′)	[MoAT1] Ontologies for Autonomous Robotics (RobOntics)		[MoAT3] Human-like Computing for Safe Collaborative Robots in Manufacturing and Healthcare	[MoAT4] HRI for Explainable Robotics
12:00-13:30 (90′)	Lunch			
13:30-16:30 (180′)	[MoBT1] Ontologies for Autonomous Robotics (RobOntics)		[MoBT3] Human-like Computing for Safe Collaborative Robots in Manufacturing and Healthcare	[MoBT4] Surgical Robots, Robot Vision, and 4D Human Models for Healthcare
17:30-21:30 (240′)		**Welcome Reception** (with Cruise)		

Aug 29 (Tue) / Day 2

	Track T1 (Sicily, 1F)	Track T2 (Grand Ballroom, 2F)	Track T3 (Capri, 2F)	Track T4 (Sydney, 2F)
09:00-09:10 (10′)		**Opening Ceremony**		
09:10-10:10 (60′)		**Keynote Speech** by Alessandra Sciutti		
10:10-10:20 (10′)	Coffee Break			
10:20-11:20 (60′)	[TuAT1] HRI in Academia and Industry: Bridging the Gap I		[TuAT3] Creating Human-Robot Relationships	[TuAT4] Non-Verbal Cues and Expressiveness I
11:20-11:30 (10′)	Coffee Break			
11:30-12:40 (70′)	[TuBT1] HRI in Academia and Industry: Bridging the Gap II		[TuBT3] Assistive Robotics I	[TuBT4] Non-Verbal Cues and Expressiveness II
12:40-14:00 (80′)	Lunch			
14:00-14:40 (40′)	[TuCT1] Humanoid Robots in Healthcare: Exploring Real World Applications		[TuCT3] Assistive Robotics II	[TuCT4] Applications of Social Robots I
14:40-15:20 (40′)	[TuDT1] SARCHA: Socially-Assistive Robots in Clinical and Healthcare Applications		[TuDT3] Assistive Robotics III	[TuDT4] Applications of Social Robots II
15:20-15:30 (10′)	Coffee Break			
15:30-16:30 (60′)		[TuPO] Poster Session (LBR)		
16:30-16:40 (10′)	Coffee Break			
16:40-18:10 (90′)	[TuET1] Social Human-Robot Interaction of Human-care Service Robots		[TuET3] Mental Models of the Human User in Social HRI	[TuET4] Applications of Social Robots III

	Track T5 (Miami, 2F)	Track T6 (Venice, 2F)	Track T7 (Panorama, 16F)	Optional Tour
09:00~12:00 (180′)	[MoAT5] The 1st Workshop on Learning by Asking for Intelligent Robots and Agents	[MoAT6] Speech-based Communication for Robots and Systems		
12:00~13:30 (90′)	Lunch			
13:30~16:30 (180′)	[MoBT5] Second Edition of Workshop in Care Robots for Older Adults (CROA)	[MoBT6] GROUND: Advancing GROup UNderstanding and Robots' aDaptive Behavior	[MoBT7] HRI4Wellbeing: Applications in the Real World	
17:30~21:30 (240′)				

	Track T5 (Miami, 2F)	Track T6 (Venice, 2F)	Lobby (2F)	Lobby (2F)	Optional Tour
09:00~09:10 (10′)			Robot Design Competition	Exhibition	
09:10~10:10 (60′)					
10:10~10:20 (10′)	Coffee Break				
10:20~11:20 (60′)	[TuAT5] Innovative Robot Designs I	[TuAT6] Novel Interfaces and Interaction Modalities I			
11:20~11:30 (10′)	Coffee Break				
11:30~12:40 (70′)	[TuBT5] Innovative Robot Designs II	[TuBT6] Novel Interfaces and Interaction Modalities II			
12:40~14:00 (80′)	Lunch				
14:00~14:40 (40′)	[TuCT5] Motion Planning and Navigation in Human-Centered Environments I	[TuCT6] Novel Interfaces and Interaction Modalities III			
14:40~15:20 (40′)	[TuDT5] Motion Planning and Navigation in Human-Centered Environments II	[TuDT6] Novel Interfaces and Interaction Modalities IV			
15:20~15:30 (10′)	Coffee Break				
15:30~16:30 (60′)					OP 2 Night Tour (17:00~21:00)
16:30~16:40 (10′)	Coffee Break				
16:40~18:10 (90′)	[TuET5] Motion Planning and Navigation in Human-Centered Environments III	[TuET6] Robot Perception for Interaction and Communication			

Aug 30 (Wed) / Day 3

	Track T1 (Sicily, 1F)	Track T2 (Grand Ballroom, 2F)	Track T3 (Capri, 2F)	Track T4 (Sydney, 2F)
09:00-10:00 (60')		**Keynote Speech** by Sangok Seok		
10:00-10:20 (20')	Coffee Break			
10:20-11:20 (60')	[WeAT1] Human-mediated Robot Autonomy	Robot Design Competition 10:20-12:10 Individual Presentation	[WeAT3] Child-Robot Interaction I	[WeAT4] Human Factors and Ergonomics I
11:20-11:30 (10')			Coffee Break	
11:30-12:50 (80')	[WeBT1] To Err is Robotic: Understanding, Preventing, and Resolving Robots' Failures in HRI		[WeBT3] Child-Robot Interaction II	[WeBT4] Human Factors and Ergonomics II
12:50-14:00 (70')	Lunch			
14:00-15:20 (80')	[WeCT1] Human-Agent/Robot Interaction in Healthcare and Medicine			[WeCT4] Motivations and Emotions in Robotics
15:20-15:30 (10')	Coffee Break			
15:30-16:30 (60')	[WeDT1] Short- and Long-Term Personalisation in Social HRI			[WeDT4] Haptic Interaction Design
16:30-16:40 (10')	Coffee Break			
16:40-18:00 (80')	[WeET1] Designing Trustworthy Human Agent Interaction in Dynamic Context			[WeET4] HRI and Collaboration in Manufacturing Environments
18:30-20:30 (120')		**Banquet** (Main Hall) Up to 300 people	**Banquet** (Live Streaming) More than 300 people	

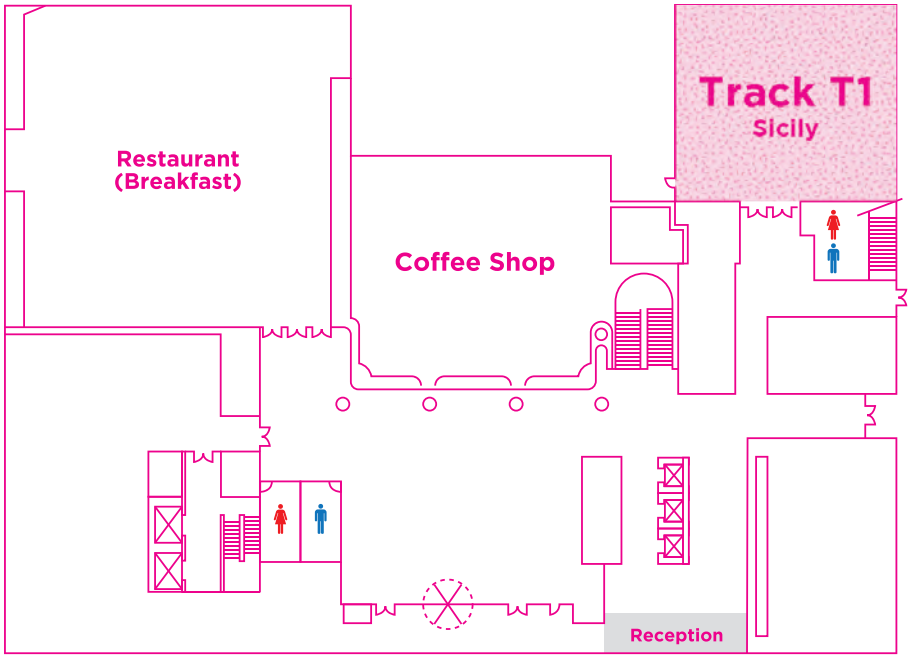
Aug 31 (Thur) / Day 4

	Track T1 (Sicily, 1F)	Track T2 (Grand Ballroom, 2F)	Track T3 (Capri, 2F)	Track T4 (Sydney, 2F)
09:00-10:00 (60')		**Keynote Speech** by Tomohiro Shibata		
10:00-10:30 (30')	Coffee Break			
10:30-11:50 (80')	[ThAT1] Cognition & Assistive Robots	[ThAT2] Ethical Issues in Human-Robot Interaction Research	[ThAT3] Robot Companions and Social Robots	[ThAT4] Robots in Education, Therapy and Rehabilitation
11:50-12:10 (20')		**Closing Ceremony** (Award)		
12:10-13:10 (60')	Lunch			
13:10-16:00 (170')	[ThWT1] Trust, Acceptance and Social Cues in Human-Robot Interaction - SCRITA	[ThWT2] 7th Workshop on Behavior Adaptation, Interaction and Learning for Assistive Robotics (BAILAR)	[ThWT3] Robots for Learning (R4L): AI to power Robots	[ThWT4] Researching Diversity and Inclusion in Human-Robot Interaction: Methodological, Technical and Ethical Considerations (divHRI)
16:30-21:40 (310')	**Farewell** (P-ark)			

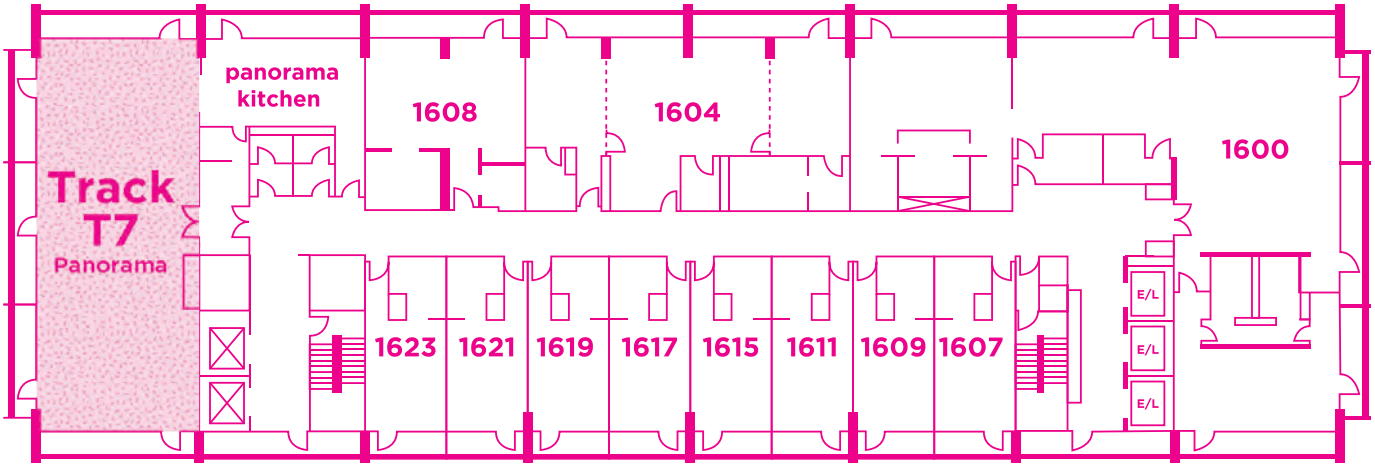
	Track T5 (Miami, 2F)	Track T6 (Venice, 2F)	Track T7 (Panorama, 16F)	Lobby (2F)	Lobby (2F)	Optional Tour
09:00~10:00 (60')					Exhibition	
10:00~10:20 (20')	Coffee Break					
10:20~11:20 (60')	[WeAT5] Social Intelligence for Robots I	[WeAT6] Virtual Reality&Telepresence I				
11:20~11:30 (10')	Coffee Break					
11:30~12:50 (80')	[WeBT5] Artificial Intelligence in HRI I	[WeBT6] Virtual Reality&Telepresence II				
12:50~14:00 (70')	Lunch			Interactive Poster 12:10~12:50		OP 3 Lab Tour (13:00~16:00)
14:00~15:20 (80')	[WeCT5] Artificial Intelligence in HRI II	[WeCT6] Linguistic Communication and Dialogue	[WeCT7] Human-Robot Cooperation and Collaboration Environments	Robot Design Competition		
15:20~15:30 (10')	Coffee Break					
15:30~16:30 (60')	[WeDT5] Longitudinal HRI Studies and Social Navigation	[WeDT6] Nonverbal Communication Skills in Humans and Robots	[WeDT7] Sound Design for Robots			
16:30~16:40 (10')	Coffee Break					
16:40~18:00 (80')	[WeET5] Social Human-Robot Interaction of Human-Care Service Robots (Regular Paper)	[WeET6] Hand-Object Interaction: From Human Demonstrations to Robot Manipulation	[WeET7] User-Centered Design of Robots			
18:30~20:30 (120')						

	Track T5 (Miami, 2F)	Track T6 (Venice, 2F)	Lobby (2F)	Lobby (2F)	Optional Tour
09:00~10:00 (60')			Robot Design Competition	Exhibition	
10:00~10:30 (30')	Coffee Break				
10:30~11:50 (80')	[ThAT5] Social Intelligence for Robots II	[ThAT6] Visual and Haptic Cues for Physical Human-Robot Interaction and Co-Manipulation			
11:50~12:10 (20')					
12:10~13:10 (60')	Lunch				
13:10~16:00 (170')	[ThWT5] Multidisciplinary Perspectives on Context-aware Embodied Spoken Interactions (MP-COSIN)	[ThWT6] WARN: Weighting the benefits of Autonomous Robot PersoNalization			
16:30~21:40 (310')	**Farewell** (P-ark)				

1F Track T1 Sicily

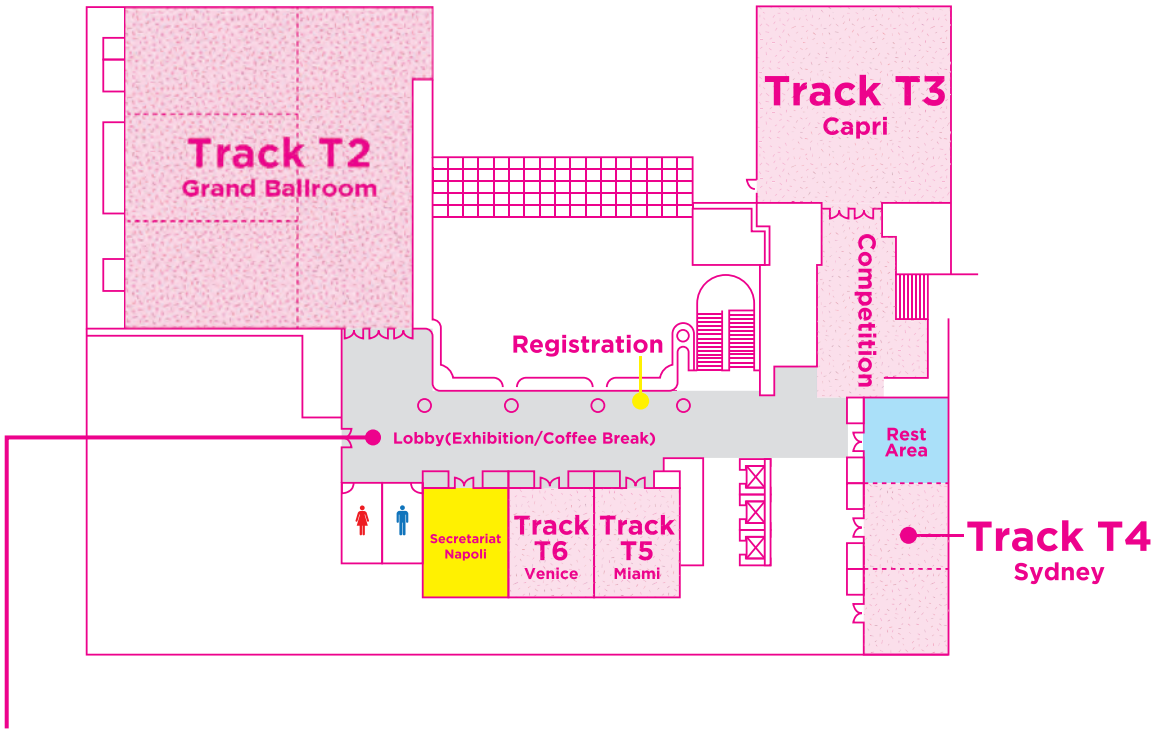


16F Track T7 Panorama



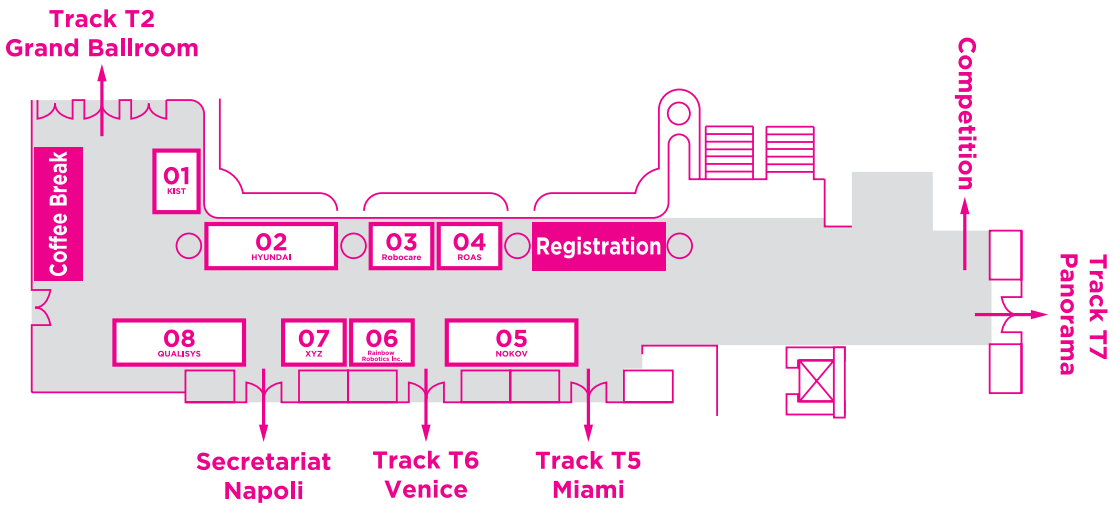
2F

Track T2 Grand Ballroom
Track T3 Capri
Track T4 Sydney
Track T5 Miami
Track T6 Venice



Exhibiton

01 Korea Institute of Science and Technology
02 Hyundai Motor Company Robotics Lab
03 Robocare
04 ROAS
05 NOKOV Motion Capture
06 Rainbow Robotics
07 XYZ
08 Qualisys AB



I Welcome Message

JongSuk Choi
General Chair of RO-MAN 2023

Esteemed Colleagues,

I extend a warm and heartfelt welcome to each one of you to RO-MAN 2023 and to the host city, Busan Metropolitan City. Furthermore, I am deeply honored to convey our heartfelt appreciation to all participants on behalf of the Organizing Committee for their invaluable contribution to RO-MAN 2023.

RO-MAN has consistently stood as a preeminent conference where esteemed scholars and proficient engineers convene to deliberate upon theories, methodologies, and technologies that invigorate and enhance the domain of Robot and Human Interactive Communication. Each successive iteration of RO-MAN has encapsulated the fluid and swift evolution of the Robot-Human relationship.

With an encompassing sense of delight and anticipation, we assemble here, uniting brilliant intellects hailing from various corners of the globe, to embark upon a captivating exploration of Robot and Human Interactive Communication. This conference stands as an eminent platform, fostering interaction among researchers, industry professionals, and enthusiasts, enabling them to immerse themselves in the vanguard of this swiftly advancing field, and facilitating the exchange of pioneering concepts, practical experiences, and profound insights.

In the wake of the recent pandemic challenges, there has been a discernible surge in the imperative for improved human well-being and contentment. Simultaneously, the advancement of robotic technology, intricately intertwined with artificial intelligence, beckons us to forge a renewed nexus with machines through sophisticated interfaces and interactions. This juncture compels us to embark upon a quest for enhanced human health and a harmonious existence.

The chosen theme for this year's discourse is "Design a New Bridge for Human Health, Robotic Recovery, and Intelligent Interaction." The symbolic representation of [H] for Human Health, Happiness, and Hope, [R] for Robotic Recovery and Reconnection, and [I] for Intelligent Interface and Interaction, crystallizes the essential dimensions to alleviate and surmount the prevailing sense of detachment and apprehension, which has been exacerbated by the aftermath of COVID-19, isolating us within a virtual realm bereft of genuine human connection.

Over the course of our 4-day conference itinerary, a total of 410 papers, comprising Regular papers, Special papers, and Late Breaking Reports, have been thoughtfully curated and disseminated across 60 distinct sessions, thereby enriching RO-MAN 2023 with a tangible manifestation of the symbiotic relationship between human and scientific technology. This collaborative effort seeks to foster a palpable and corporeal linkage between these domains. Furthermore, the convergence of 18 Workshop/Tutorial sessions and Robot Design Competition session has been orchestrated with the explicit intent of fostering an environment conducive to cultivating enhanced human well-being, contentment, and optimism by engendering more wholesome interactions with intelligent interfaces.

I urge each participant to wholeheartedly immerse themselves in the experience of RO-MAN 2023. Our esteemed cadre of keynote speakers are poised to amplify our collective comprehension of the thematic underpinnings, while our sponsors will exhibit tangible evidence of concept through the presentation of artifacts and products that epitomize advancements in the Human-Robot Interaction (H-R-I) nexus.

It is with profound gratitude that I acknowledge the significant contributions of our keynote speakers and sponsors, who have enriched our conference through their participation and commitment. Additionally, I extend my deepest appreciation to our esteemed colleagues, who are the bedrock of our conference, and I encourage them to fully embrace the myriad of invaluable opportunities that RO-MAN 2023 offers. In the days ahead, expect not only academic enrichment but also the prospect of engaging in meaningful social and cultural interactions.

Welcome to RO-MAN 2023!

II Committees

Organizing Committee

Honorary Chairs	Dong-Soo Kwon Young-Jo Cho	Korea Advanced Institute of Science and Technology(KAIST) Electronics and Telecommunications Research Institute(ETRI)
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Finance Chair	Youngsu Cha	Korea University
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Workshop/ Tutorial Chairs	Uikyum Kim Natsuki Yamanobe Giulia Belgiovine	Ajou University National Institute of Advanced Industrial Science and Technology(AIST) Italian Institute of Technology
Late Breaking Report Chair	Minho Hwang Hatice Gunes	Daegu Gyeongbuk Institute of Science and Technology(DGIST) University of Cambridge
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Award Chairs	Min-Gyu Kim Kenji Tahara Barbara Bruno	Korea Institute of Robotics and Technology Convergence(KIRO) Kyushu University École Polytechnique Fédérale de Lausanne(EPFL)
Competition Chairs	Sonya S. Kwak Maria Luce Lupetti David Sirkin	Korea Institute of Science and Technology(KIST) Delft University of Technology(TU Delft) Stanford University
Local Arrangement Chairs	Sang-Seok Yun Seong-Joon Yi	Silla University Pusan National University
Exhibition Chair	Hui Sung Lee	Ulsan National Institute of Science and Technology(UNIST)
Registration Chair	Yoonseob Lim	Korea Institute of Science and Technology(KIST)
Sustainability Chair	Silvia Rossi	Università degli Studi di Napoli Federico II(University of Naples Frederico II)
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Inclusion Chairs	Ho Seok Ahn Chandimal Jayawardena Lafifa Jamal	University of Auckland Sri Lanka Institute of Information Technology(SLIIT) University of Dhaka
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Web Chair	Dahyun Kang	Korea Institute of Science and Technology(KIST)

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	Ryad Chellali	Nanjing Tech University
	Young-jo Cho	Electronics and Telecommunications Research Institute(ETRI)
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	Kerstin Dautenhahn	University of Hertfordshire, United Kingdom
	Toshio Fukuda	Nagoya University
	Fumio Hara	Tokyo University of Science
	Hiroshi Harashima	University of Tokio
	Shuji Hashimoto	Waseda University
	Kohji Kamejima	Waseda University
	Kazuhiko Kawamura	Vanderbilt University
	Dong-Soo Kwon	Korea Advanced Institute of Science and Technology(KAIST)
	Yasushi Nakauchi	University of Tsukuba
	Urbano Josè C. Nunes	University of Coimbra
	Sandra Okita	Columbia University
	Amit Kumar Pandey	beingAI Limited, Hong Kong - Socients AI and Robotics
	Erwin Prassler	UBonn-Rhein-Sieg University
	Takanori Shibata	Advanced Industrial Science and Technology(AIST)
	Silvia Rossi	University of Naples Federico II
	Patricia A. Vargas	Heriot-Watt University
	Tomio Watanabe	Okayama Prefectural University

Associate Editors

Regular Paper

Barakova, Emilia I.
Jamal, Lafifa
Araujo, Rui
Yamada, Seiji
Inamura, Tetsunari
Kühnlenz, Barbara
Bennett, Casey C.
Carreno, Pamela
Indurkhya, Bipin
Shiomi, Masahiro
Kyung, Ki-Uk
Nakadai, Kazuhiro
Alimardani, Maryam
Dias, Jorge
Kühnlenz, Kolja
Lee, Jaeryoung
Kang, Dahyun
Lee, Hui Sung
Novak, Vesna
Bonsignorio, Fabio
Chemori, Ahmed
Kim, Soonkyum
Brscic, Drazen
Kopp, Stefan
Lim, Yoonseob
Brown, Edward
Benali, Abderraouf
Hu, Yue
Koyanagi, Ken'ichi
Kong, He
Mastrogiovanni, Fulvio
Belgiovine, Giulia
Mendonca, Rochelle
Lupetti, Maria Luce
Aly, Amir
Minato, Takashi
Morales, Luis Yoichi
Nardi, Daniele
Jayawardena, Chandimal
Nam, Changjoo
Cordella, Francesca
Kanda, Takayuki
Nomura, Tatsuya
Ozyer, Baris
Pandey, Amit Kumar
Ghose, Debasish
Niitsuma, Mihoko
Sgorbissa, Antonio
Jin, Sangrok
Recchiuto, Carmine Tommaso
Gunes, Hatice
Iio, Takamasa
Park, Juyoun
Di Zhou, Di
Obo, Takenori
Hirata, Yasuhisa
Tian, Leimin
Ohara, Kenichi
Eimontaite, Iveta
Kim, Min-Gyu
Rossi, Silvia
Robinette, Paul
Wang, Meng
Solis, Jorge
Giannopulu, Irini
Staffa, Mariacarla
Sejima, Yoshihiro
Yamanobe, Natsuki
Itoyama, Katsutoshi
Trovato, Gabriele
Wada, Kazuyoshi
Frisoli, Antonio
Yun, Sang-Seok
Yokota, Sho
Cho, Hye-Kyung
Tan, Huan
Casadio, Maura
Fiorini, Laura
Lee, Hee Rin
Cha, Youngsu
Kim, Uikyum
Franziska, Kirstein
Yi, Seung-Joon
Torta, Elena
Tapus, Adriana
Kwak, Sonya Sona

Special Session Paper

de Wit, Jan
Andriella, Antonio
Rossi, Alessandra
Ayub, Ali
Fukuchi, Yosuke
Niitsuma, Mihoko
Jang, Minsu
Mead, Ross
Park, Chung Hyuk
Fernandes, Alexandra
Imai, Michita
Park, Hae Won
Kyung, Ki-Uk
Bruno, Barbara
Beraldo, Gloria
Costanzo, Marco
Khan, Imran

Late Breaking Report

Hwang, Minho
Nam, Changjoo
Lee, Hee Rin
Ahn, Ho Seok

Ⅲ Conference Information

1. Registration

Location: Paradise Hotel Lobby (2F)

Operating Hours

Date	Aug.28 (Mon.)	Aug.29 (Tue.)	Aug.30 (Wed.)	Aug.31 (Thur.)
Time	08:00~18:00	08:00~18:00	08:00~18:00	08:00~16:00

Registration Fee Includes

Type		Workshop/ Tutorials	All Sessions	Exhibitions	Digest Book	Coffee Break	Banquet	Social Event
In-Person	Regular	X	O	O	O	O	O	O
	Regular with W/T	O	O	O	O	O	O	O
	Student	X	O	O	O	O	X	O
	Student with W/T	O	O	O	O	O	X	O
Online	Regular	X	O	X	Online Download	X	X	X
	Regular with W/T	O	O	X		X	X	X
	Student	X	O	X		X	X	X
	Student with W/T	O	O	X		X	X	X

Secretariat Office

- Location: Napoli Room (2F)

2. Social Events

Welcome Reception

All participants are welcome to attend the first part of the event, Reception with Cocktail.

- Date & Time: August 28(Mon.), 17:30 ~
- Location: Grand Ballroom, 2F

The Cruise Tour

Please note that registered participants for the Cruise Tour will gather in the lobby on the first floor by 19:20 after the welcome reception. We will walk together to the cruise dock, which is approximately a 10-minute walk away.

- Date & Time: August 28(Mon.), 19:20 ~
- Gathering Place: The lobby, 1F

* Please be prepared to show your ID for boarding the cruise. (Any forms are considered valid, including copies or photos taken of the ID)
* The tour might be called off in case of heavy rain.

Opening Ceremony

- Date & Time: August 29(Tue.), 09:00~09:10
- Location: Grand Ballroom, 2F

Banquet

- Date & Time: August 30(Wed.), 18:30~20:30
- Location: Grand Ballroom, 2F

Closing Ceremony

- Date & Time: August 31(Thur.), 11:50~12:10
- Location: Grand Ballroom, 2F
- Program: Awards, Introduction of RO-MAN 2024

Farewell

For the Farewell party, we will depart from the first floor of Paradise Hotel at 16:30 by bus to the Farewell place.
(Registered participants Only)

- Date & Time: August 31(Thur.), 16:30~20:30
- Location: KMOU, P-Ark (Sky Lounge, 6F)
- Address of P-Ark: 180 Haeyang-ro 195beon-gil, Yeongdo-gu, Busan

3. Optional Tour

Night Tour

- Date & Time: August 29(Thur.), 17:00~21:00
- Pick Up and Drop Off: Paradise Hotel 1F Lobby
- Conditions
  · Transportation & English speaking tour guide provided during the whole tour
  · All admission fees and meal included
  · Traveler's Insurance NOT included
- Program
  · BUSAN X the SKY: 17:00 ~ 18:00
  · Yacht Tour: 18:30 ~ 19:30
  · The Bay 101 (Dinner): 20:00 ~ 21:00

Lab Tour

- Date & Time: August 30(Wed.), 13:00~16:00
- Pick Up and Drop Off: Paradise Hotel 1F Lobby
- Conditions
  · Transportation & snack during the whole tour
- Lab Information: Robot Center in Pusan National University

PNU Robot Center was opened on September 3, 2009, to support research and development and professional education programs in the field of robot core technology, enable practical projects, and foster high-quality human resources to lead the next generation of robot technology. Currently PNU Robot Center consists of 10 active professors from Electronic Engineering, Electric Engineering and Mechanical Engineering departments.

This tour shows the activities of researchers belonging to the PNU Robot Center. Specific demos include quadruped robots, home service robots, surgical assistant robots, and more.

Ⅳ Keynote Speeches

Keynote Speech 1

Speaker	Alessandra Sciutti
Affiliation	Italian Institute of Technology, Italy
Position	Head of the COgNiTive Architecture for Collaborative Technologies Unit
Paper Title	Human-in-the-core Cognitive Robotics
Date & Time	August 29, 2023, 09:10~10:10 (KST Time)
Venue	Grand Ballroom (2F)

BIO

Dr. Alessandra Sciutti is the head of the CONTACT (COgNiTive Architecture for Collaborative Technologies) Unit of the Italian Institute of Technology (IIT), where she works with the iCub robot. After a master's degree in Bioengineering from the University of Genova and a Ph.D. in Humanoid Technologies, she spent two research periods abroad, first at the Robotics Lab of the Rehabilitation Institute of Chicago (USA) and then at the Emergent Robotics Laboratory of Osaka University (Japan). In 2018 she was awarded an ERC Starting Grant, among the most prestigious grants by the European Research Council (ERC), for the project wHiSPER (www.whisperproject.eu), which focused on the investigation of shared perception between humans and robots.

She published more than 80 papers in international journals and conferences and is currently Associate Editor for several journals on Cognitive Robotics and Human-Robot Interaction, among which Cognitive Systems Research, the IEEE Transactions on Cognitive and Developmental Systems, and the International Journal of Social Robotics. She is the corresponding co-chair of the Technical Committee on Cognitive Robotics of the IEEE Robotics and Automation Society and a Scholar of the ELLIS (European Laboratory for Learning and Intelligent Systems) Society. Sciutti received many awards, such as the title "Inspiring Fifty" (2018) and "Tecnovisionarie" (2021), for her research in Robotics and AI. In 2022 she was on the cover of Fortune Italy and listed among the "40 under 40" young people changing the country. She has been included in the AcademiaNet database of profiles of excellent female researchers from all disciplines.

Her research aims to investigate the sensory, motor, and cognitive mechanisms underlying human social interaction, with the technological goal of developing robots able to establish mutual understanding with humans. Please check the Contact Unit website or her Google Scholar profile for more details on her research and the complete list of publications. For an introduction to her work, please watch https://youtu.be/LCkOjR_cvxI.

Abstract

An important goal of researchers in HRI is to enable robots to predict humans' intentions, internal states, and limitations while being transparent, predictable, and adaptable in their behaviors. For starters, an interactive robot would then need a model of what it means to be human: how humans think, perceive, feel and move. This knowledge, however, would not suffice: the robot should be able to learn through actual interaction, which are the individual needs, preferences, and desires of its human partners. And this process should be continuous, as each person changes in life, as a consequence of their interaction with others, including the robot itself.

A pathway toward cognitive robots capable of being considerate of humans starts with investigating the sensory, motor, and cognitive bases of human social abilities, the principles of human-to-human mutual understanding. In such studies, robots can "lend a hand" by serving as ideal controllable probes to test quantitatively and model the dynamics of human interaction.

These basic, common components must then be integrated into a cognitive architecture, relying on memory, internal motivation, and learning to enable every robot to autonomously adapt to its partners and learn from its own experiences.

This long-term plan calls for the joint efforts of multiple disciplines, including robotics, computer science, machine learning, neurophysiology, cognitive science, psychology, and philosophy. The ambition is to develop robots that do not necessarily look like humans but think and understand as we do.

As a result, we will obtain more intuitive and adaptable robots and contribute to a more profound comprehension of human cognition through a constructive and embodied approach.

Keynote Speech 2

Speaker	Sangok Seok
Affiliation	NAVER LABS, Republic of Korea
Position	CEO
Paper Title	New Connections between Humans, Spaces, and Information-Robotics, Autonomous Driving, AI, Digital TWIN
Date & Time	August 30, 2023, 09:00~10:00 (KST Time)
Venue	Grand Ballroom (2F)

BIO

Dr. Sangok Seok, CEO of NAVER LABS, is leading NAVER's next-generation technology platform research through the integration of robotics, AI, autonomous driving, digital twin, etc. Holding a bachelor's and master's degree in Mechanical and Aerospace Engineering from Seoul National University and a doctorate in Mechanical Engineering from the Massachusetts Institute of Technology, his research paper on the MIT Cheetah was selected as the best paper at IEEE/ASME Transactions on Mechatronics in 2016. After working in National Instruments and Samsung Electronics, Dr. Seok joined NAVER in 2015, spearheading NAVER's robotics field and filing numerous robot-related patents. Since becoming the CEO of both NAVER LABS (in 2019) and NAVER LABS Europe (in 2020), he has been leading world-class researchers from 27 countries, focusing on preparing the future of NAVER, which will connect people, machines, spaces, and information through the most innovative and advanced technologies. In 2022, Dr. Seok received much attention from international corporations · media · research institutions for the "1784 Project," under which NAVER's second headquarters was constructed as the world's first robot-friendly building. In recognition of the first domestic installation of local 5G networks and his contribution to the advancement of smart building technologies, he was awarded the Bronze Tower Order of Industrial Service Merit.

Abstract

This lecture introduces the future in which people, spaces, and information will form new connections, and explains the core technologies required for this.

The development of high-performance sensors, AI, robots, and autonomous driving technology is rapidly blurring the boundaries between physical space and virtual space, and accelerating the automation of shipping and logistics infrastructure. Ultimately, everyday space itself will serve as a single platform, organically connecting with various services.

The technological topics that must precede such change lie in 'digital twin' and 'mobility.' A digital twin is a replica of the real world in a digital environment, serving as important data for smart cities, autonomous driving, service robots, XR, and metaverses. As it is highly time-consuming and costly to establish a digital twin of a city, an innovative solution is needed. The technology that performs precise localization based on this digital twin data is also important. In particular, seamless localization should be made possible with technologies such as VL (visual localization), which can accurately determine the location from a single photo, even indoors or between dense buildings where GPS does not work. Mobility, that continues the connection with users in diverse environments, is now the role of the robot. It is still a huge challenge for robots to leave factories and coexist with humans in everyday environments.

In addition to wheels and legs for movement, safe and precise control of robot arms and hands, which enables robots to work, is also required. Software requires even further development. Vision-based deep reinforcement learning that enables natural autonomous driving without expensive sensors, HRI (human-robot interaction) research that creates standards for natural coexistence between humans and robots, robot technology that expands boundaries of movement from indoors to roads, and brainless robot technology that simultaneously controls multiple robots through the cloud and ultra-low latency networks will bring forward the popularization of robot services.

With these technologies, robots will store information and move on their own, becoming an innovative infrastructure that creates new connections between cities, buildings, offices, etc. The future technologies that have stayed in research labs are now increasingly moving into our lives. This lecture will address its prospects and the challenges we face today.

Keynote Speech 3

Speaker	Tomohiro Shibata
Affiliation	Kyushu Institute of Technology
Position	Professor
Paper Title	Designing Assistive Robots that Harness Physical Interaction between Humans and Robots
Date & Time	August 31, 2023, 09:00~10:00 (KST Time)
Venue	Grand Ballroom (2F)

BIO

Tomohiro Shibata received Ph.D. from the University of Tokyo, Japan, in 1996, continued his robotics study as a JSPS (Japan Society for the Promotion of Sciences) researcher, and then worked on computational neuroscience research using a humanoid robot at ATR (Advanced Telecommunication Research Institute) as a JST (Japan Science and Technology) researcher. After working as an associate professor at Nara Institute of Science and Technology in robotics, computational neuroscience, and assisted living, he currently works as a professor at Kyushu Institute of Technology, Kitakyushu, Japan. He also organizes the Smart Life Care Co-Creation Laboratory, which the Ministry of Health, Labor and Welfare use for a project to develop, demonstrate, and promote nursing care robots.

He received a young investigator award from the Robotics Society of Japan (1992), the Best Paper Award from the Japanese Neural Network Society (2002 and 2015), the Neuroscience Research Excellent Paper Award from the Japan Neuroscience Society (2007), the Best Application Paper Award of IROS 2015 (2015), Excellent Paper Award from the RSJ (2020), Best Presentation Award of ICIEV and icIVPR (2021), the Winner in the Healthcare Category of Garmin Healthcare Awards (2022), and others.

He was an editorial board member of Neural Networks and an executive board member of the Robotics Society of Japan (RSJ). He is currently an executive board member of the Japanese Neural Network Society (JNNS), a fellow of the RSJ, a member of the International Exchange Committee of the RSJ, and the head of the special interest group on "Nursing Care Robots" of the RSJ. He is also a member of IEEE, a governing council member of The Robotics Society (of India), a member of JSME, and the Society for Nursing Science and Engineering.

Abstract

The demand for assistive robots is rapidly increasing across the medical, nursing care, and welfare sectors. When designing such robots, it is crucial to address the needs and abilities of the target users while considering the specific situations and environments they will operate in. The ultimate goal is to maximize the user's potential and support their independence.

However, designing assistive robots poses significant challenges due to the varying anthropometric, kinematic, peripheral nervous system, central nervous system, and other characteristics of individuals. Ideally, we would incorporate all these factors into models and develop control laws accordingly, but this proves challenging in practice.

To address these challenges, this keynote will focus on the design approach leveraging the physical interaction between the user and the robot. The presentation will include research on the gait-assistive robot that prevents and alleviates gait freezing symptoms in patients with neurological diseases, the wearable assistive suit that facilitates the learning of skilled workers' caregiving behaviors, and dual-armed robots that assist in dressing. The basic design policy is to exploit human abilities; the user's neural oscillation system in the gait-assistive robot, the user's motor learning system in the assist suit, and the user's residual motor abilities in the dressing robot.

In summary, by emphasizing physical interaction and leveraging the abilities of the person being assisted, assistive robots can significantly improve the quality of life for those facing physical challenges. However, cost, weight, and size remain notable barriers to the widespread adoption of such assistive robots. We often employ inexpensive and light pneumatic artificial muscles as actuators to overcome the issues. Other approaches will also be discussed, such as utilizing 3D printing technology and minimizing the robot's complexity.

V Workshops & Tutorials

Workshops & Tutorials [Day 1]

Ontologies for Autonomous Robotics (RobOntics)

Organizers	**Mihai Pomarlan***, Universitatea Politehnica Timisoara Stefano Borgo, National Research Council Mohammed Diab, Imperial College London
Time/ Location	Aug 28, 2023 09:00~12:00 (180') 13:30~16:30 (180') | Track T1 (Sicily, 1F)

Description

Nowadays, in either indoor environments or industrial settings, the collaborative tasks between robotic systems and humans have been playing a significant role. This is further boosted by knowledge-driven frameworks, that facilitate robot-robot, human-robot, or human-systems communications. Moreover, machine learning and artificial intelligence tools, together with cognitive automation approaches, data-driven industrial processes, and digital twins might make robotic systems smarter for the new generation of advanced systems. With this perspective, different scientific and technological key issues, tackled by the scientific community for smart manufacturing, will be addressed here. The objective of this workshop is to share expertise and overview scientific issues, current techniques, and achievements in the domains of interaction and collaboration between humans and robots or smart systems. This workshop addresses some key aspects of collaborative settings that improve when using ontology and knowledge representation and reasoning. It provides a platform for practitioners from the various engineering fields meet and match open problems to promising approaches, and review progress in knowledge-enabled robotics. Topics include, but are not limited to knowledge driven approaches supporting: Human-robot interaction; robot-robot collaboration; Human-machine interactions; Natural language processing during interaction; Trustworthy systems; Adaptive manipulation planning; Ontologies-based modeling and reasoning; Dexterous manipulation; Smart manufacturing applications.

Human-like Computing for Safe Collaborative Robots in Manufacturing and Healthcare

Organizers	**John Oluwagbemiga Oyekan***, University of York Maria Jose Galvez Trigo, Cardiff University Yanan Liu, University of Bristol
Time/ Location	Aug 28, 2023 09:00~12:00 (180') 13:30~16:30 (180') | Track T3 (Capri, 2F)

Description

Current industrial robots cannot be programmed or taught in a way equivalent to how human-to-human teaching happens. When a human is teaching another human, the human demonstrates a task via actions and gestures which act on objects towards completing a task. This is unlike current approaches in robotics where robot arms are Kinaesthetically taught. Moreover, after being taught, it is currently difficult for robots to deal with various variations in their environment after they have been programmed to do a task. The aim is that the assembled speakers will provide various viewpoints on the journey to build the next generation of cognitive robots while highlighting the gaps in current approaches.

HRI for Explainable Robotics

Organizers	**Wafa JOHAL***, University of New South Wales Fethiye Irmak Dogan, KTH Royal Institute of Technology Ornnalin Phaijit, University of New South Wales Aaquib Tabrez, University of Colorado Boulder Maartje de Graaf, Utrecht University
Time/ Location	Aug 28, 2023 09:00~12:00 (180') | Track T4 (Sydney, 2F)

Description

Autonomous robot applications are rising. With the new wave in artificial intelligence (AI) powered by machine learning and novel algorithms, more complex robotic systems are being designed to function around humans. In this workshop, experts in the field will share their knowledge concerning the design of Human-Robot Interaction (HRI) systems which support explainability, and their evaluation with human users to gather empirical evidences. The workshop is organized as a highly interactive event, in which participants are encouraged to discuss their research in groups and with the experts.

The 1st Workshop on Learning by Asking for Intelligent Robots and Agents

Organizers	**Minsu Lee***, Seoul National University Woo Suk Choi, Seoul National University Youwon Jang, Seoul National University Minsu Jang, Electronics & Telecommunications Research Institute Jonghyun Choi, Yonsei University Byoung-Tak Zhang, Seoul National University Roozbeh Mottaghi, Meta
Time/ Location	Aug 28, 2023 09:00~12:00 (180') | Track T5 (Miami, 2F)

Description

Humans are usually flexible enough to adapt and cope with various situations. A key aspect of this ability is their self-awareness of what wthey know and do not know, which provides a strong foundation for learning. In addition, asking good questions to gain knowledge or resolve uncertainty is a powerful tool for improving personal intellectual ability. On the other hand, robots and artificial intelligence (AI) agents cannot distinguish between what they know and what they do not know, so they do not deal with unlearned or unfamiliar situations. To address this issue, several studies have been conducted in recent years. These studies show that AI agents can respond effectively to unknown situations if they understand the uncertainty and can learn by human interactions, such as asking questions.

This workshop aims to bring together leading experts from diverse fields, including vision, language, and embodied AI, to share their insights on current research trends and engage in meaningful discussions about the future challenges in "Learning by Asking". The workshop will consist of contributed talks, contributed posters, invited talks, and panelist on a wide variety of novel vision and language methods and robot applications

Speech-based Communication for Robots and Systems

Organizers	**Yui Sudo***, Honda Research Institute Japan Kazuhiro Nakadai, Tokyo Institute of Technology Katsutoshi Itoyama, Tokyo Institute of Technology Muhammad Shakeel, Honda Research Institute Japan Co., Ltd
Time/ Location	Aug 28, 2023 09:00~12:00 (180') | Track T6 (Venice, 2F)

Description

For human-robot and human-system speech-based communication, various researches have been actively studied, including automatic speech recognition (ASR), natural language processing, dialog management, and speech synthesis, by focussing on communication and/or interaction.

For example, ASR is a key component for natural and smooth human-robot interaction, but there are many obstacles to overcome in the real world, such as noise, interruption, barge-in, latency, and so on. Many techniques based on emerging deep learning technology have been proposed in the speech processing community to address these well-known problems, they have not been technically discussed in the context of human-robot communication, and thus these techniques have limitations to apply them to real human-robot communication scenarios due to lack of robustness and technological unmatch with a target application. This situation tells us the necessity of technical discussion considering application-specific requirements.

The goal of this workshop is to identify real-world challenges and explore their solutions for more practical human-robot and human-system speech-based communication by sharing real-world application-specific problems, which are actually faced by speakers and audience in this workshop.

Surgical Robots, Robot Vision, and 4D Human Models for Healthcare

Organizers	**Hyewon SEO***, ICube-University of Strasbourg Hadrien Courtecuisse, AVR, CNRS Strasbourg Minsu Jang, Electronics & Telecommunications Research Institute Paul Baksic, Université de Strasbourg
Time/ Location	Aug 28, 2023 13:30~16:30 (180') | Track T4 (Sydney, 2F)

Description

With the progress in numerical healthcare over the past years, the need for numerical tool in the clinical workflow is growing either for pre, per or post-operative steps. This need is amplified by the constant growing use of new imaging tools and robots in Minimally Invasive Surgery (MIS) and radiology. This rapid evolution of surgical tools and techniques put a particular stress on image processing, allowing for instance augmented view, auto segmentation or robotic registration. But when image-based algorithms fail to provide consistent results, the use of numerical models, such as mechanical models, can help to regularize the results. This workshop will present new advances in those two key domains for numerical healthcare: human models for image recognition and numerical models for training and medical robotics.

Second Edition of Workshop in Care Robots for Older Adults (CROA)

Organizers	**Sofia Thunberg***, Linköping University Maria Arnelid, Linköping University Hannah L. Bradwell, University of Plymouth Leonie Cooper, University of Plymouth Lihui Pu, Griffith University
Time/ Location	Aug 28, 2023 13:30~16:30 (180') | Track T5 (Miami, 2F)

Description (Online Only)**

In response to demographic shifts contributing to an older population, limited health and social care budgets and staff shortages in institutionalised care for older adults, caring robots are increasingly imagined as potential caregivers for older adults. During the past 20 years, several initiatives have sought to design, develop, and deploy robots in care environments, focusing on robots assisting with, for example, physical and cognitive training, or providing social companionship. In this workshop we want to focus on the concept of care in the development and use of care robots for older adults. We are interested in: What different understandings of care are at play in care robotics for older adults, which practical implementation factors are there (such as infrastructure, WIFI, staff digital health literacy, investment potential), and how are care robots perceived by different key stakeholders (such as older adults, care staff, family, municipalities/care companies). We want to encourage critical reflection around these questions and invite creative ideas for how to design care robots for older adults.

The aim of this half-day workshop is to provide a forum to share and learn about recent research and experiences with care robotics for older adults. The workshop will be an online event.

GROUND: Advancing GROup UNderstanding and Robots' aDaptive Behavior

Organizers	**Giulia Belgiovine***, Istituto Italiano di Tecnologia Linda Lastrico, Italian Institute of Technology Ana Tanevska, Uppsala University Giulia Pusceddu, Istituto Italiano di Tecnologia, Università di Genova Francesca Cocchella, Italian Institute of Technology/University of Genoa Dario Pasquali, Istituto Italiano di Tecnologia
Time/ Location	Aug 28, 2023 13:30~16:30 (180') | Track T6 (Venice, 2F)

Description

The proposed workshop aims to provide a cutting-edge perspective on group interactions in the field of Human-Robot Interaction. As social and cognitive robots become increasingly integrated into our daily lives and are introduced into multi-party contexts such as schools, care facilities, and workplaces, it is crucial to ensure that their behavior considers the complex social dynamics present in these scenarios. However, studying group dynamics in HRI entails inherent challenges from both a technical (e.g., tracking multiple users simultaneously) and a theoretical point of view (e.g., modeling multiple agents who dynamically influence each other). New challenges, therefore, await the HRI community, such as ensuring that social robots can adapt to the needs of individual group members while also considering the group as a whole, susceptible to subtle and hidden social norms and balances. Furthermore, it is crucial that robots do not exhibit biases or unethical behavior in these contexts, eventually leading to negative consequences such as social exclusion. One possible approach to overcome these challenges is through experimental designs based on gamification. This approach can favor an unbiased way of behaving in laboratory experiments, mitigating the Hawthorne effect (i.e., the variations in behavior due to the presence of an observer). Participants are invited to share innovative strategies for exploring group-robot interactions, with approaches focused on - but not limited to – gamification, providing a fresh and insightful viewpoint to (1) using social robots for understanding group dynamics; (2) designing social agents able to interact with groups. Additionally, the discussion will involve the ethical implications of researching group dynamics, including potential negative outcomes such as biases toward group members.

HRI4Wellbeing: Applications in the Real World

Organizers	**Micol Spitale***, University of Cambridge Sooyeon Jeong, MIT Shelly Levy Tzedek, Ben Gurion University Hatice Gunes, University of Cambridge
Time/ Location	Aug 28, 2023 13:00~17:00 (240') | Track T7 (Panorama, 16F)

Description (Hybrid)**

The main topic of our workshop will be robotic applications for wellbeing in the real world, which is strongly in line with the RO-MAN 2023 theme of "Design a New Bridge for H-R-I", which seeks to address the challenges of developing intelligent robots for human health.Robots are becoming more prevalent in our society for task-oriented goals (e.g., cleaning the house, cooking a meal) and social-oriented interactions such as companionship, assistance, and coaching. We expect robots to share our daily lives in our homes, workplaces, and public spaces. However, most HRI works are limited to lab settings because of several challenges associated with running studies In the real world, such as set-up challenges, ethical concerns, and host availability, leading to research results that are only valid in lab settings but not in real-world scenarios. Also, the publication of in-the-wild experiments is one of the main barriers to the deployment of robots in the real-world since those studies usually involve less participants, and in turn leading to less statistically significant results. Hence, the HRI field should encourage long-term in-the-wild studies with the target population (even with a small sample size), as they provide contextualised results not achievable in online or lab studies (which can include larger sample sizes).

Previous Human-Robot Interaction (HRI) research has recently concentrated on applications that promote mental and physical wellbeing, such as mindfulness training and rehabilitative physical therapy. Robotic coaches for wellbeing are becoming an increasingly relevant line of research, as people have shown increased interest in using digital tools to improve their wellbeing, especially during the COVID-19 pandemic.

Workshops & Tutorials [Day 4]

Trust, Acceptance and Social Cues in Human-Robot Interaction - SCRITA

Organizers	**Alessandra Rossi***, University of Naples Federico II Patrick Holthaus, University of Hertfordshire Gabriella Lakatos, University of Hertfordshire Sílvia Moros, University of Hertfordshire Lewis Riches, University of Hertfordshire
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T1 (Sicily, 1F)

Description

People's ability of accepting and trusting robots is fundamental for a fruitful and successful coexistence between humans and robots. While advanced progress is made in studying and evaluating the factors affecting people's acceptance and trust in robots in controlled or short-term (repeated interactions) settings, developing service and personal robots that are accepted and trusted by people still presents an open challenge for scientists in robotics, AI and HRI. In such unstructured static and dynamic human-centred environments scenarios, robots should be able to learn and adapt their behaviours to the situational context, but also to people's prior experiences and learned associations, their expectations, and their and the robot's ability to predict and understand each other's behaviours. This workshop focuses on identifying the challenges and dynamics between people and robots to foster short interactions and long-lasting relationships in different fields, from educational, service, collaborative, companion, care-home and medical robotics. Moreover, from previous editions and recent literature, it is also clear that the field of HRI field lacks measures that can effectively and unmistakably assess people's trust in robots. In this workshop, we also aim to not only produce groundbreaking research to effectively design socially acceptable and trustable robots to be deployed "in the wild", but also to develop novel methods to assess people's trust towards them. To this extent, we will organise a spin-date discussion, following the "world café" method, to draft an initial questionnaire to measure the aspects we believe affect the most people's trust in robots.

7th Workshop on Behavior Adaptation, Interaction and Learning for Assistive Robotics (BAILAR)

Organizers	**Mariacarla Staffa***, University of Naples Parthenope Silvia Rossi, Universita' di Napoli Federico II Alessandra Sciutti, Italian Institute of Technology Katie Winkle, Uppsala University
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T2 (Grand Ballroom, 2F)

Description

Mutual affective understanding is integral for achieving the so-called Theory of Mind (ToM) allowing successful, acceptable and intelligent social human-robot interaction (HRI).

Corresponding concepts rely on new paradigms of robotic control systems that consider not only the possibility for a robot to interpret humans' observable behaviors and internal/emotional states with the aim of anticipating and adapting to their subsequent reactions, but also to facilitate humans in the interpretation and anticipation of the robot's state, intentions, and future actions through legible behavior designed around the emotional dimension of the communication. It is crucial to endow a robot with the ability to maintain a model of how human partners perceive the world and the robot itself, so as to be able to understand them better and to generate behaviors that are understandable by them. In addition to being able to detect and interpret humans' basic affective responses so as to adapt their behavior accordingly, robots should also be endowed with the ability to show affective and social responses in a legible way for humans to allow acceptability and efficient human-machine communication. This is especially desirable in the field of Socially and Assistive Robotics (SAR), where interaction often takes place with disabled or vulnerable people. Moreover, robots can help decrease the workload and physical contact of healthcare specialists, which would be beneficial to overcome the situations where elderly or vulnerable people are at risk of getting infected. The need to ensure the positive feelings and acceptance of people, while providing them with the necessary assistance, has outlined the utility of intelligent and empathic socially assistive robots. In these contexts, it is of paramount importance to consider the effect of verbal and non-verbal emotional social cues of the robot on the affective state of the user with whom it is interacting. On the one hand, a robot can be employed to provide assistance to individuals with disability (e.g., cognitive or physical rehabilitation exercises) with the aim of increasing their health and improving their quality of life. On the other hand, its presence and actions could also potentially trigger negative emotions such as stress or discomfort if not tailored to the particular individual's needs and expectations. This may cause serious difficulties by negatively impacting the users' health and, in turn, achieving a counter-productive result. In this context, robots could use the affect-sensing capability to learn and adapt their behavior to be more comfortable for individuals and to achieve a higher degree of learnability and acceptability through inclusive interaction.

This edition of BAILAR Workshop aims at putting the mutual understanding of affective/emotional states of robots and humans at the crossroads with learning and user adaptation within HRI. Methodologies and technologies adopted for detecting and adapting to users' mental states, emotions and dispositions during HRI will be presented and discussed. Experimental protocols and results could also outline possible effects of gender, age, personality and pathology on robot perception from an emotional and affective point of view, as well as ethical considerations regarding learning and using personal data within assistive applications.

Robots for Learning (R4L): AI to power Robots

Organizers	**Daniel Carnieto Tozadore***, École Polytechnique Fédérale de Lausanne (EPFL) Jauwairia Nasir, University of Augsburg Junko Kanero, Sabanci University Michelle Neumann, Southern Cross University, Gold Coast Mark Neerincx, TNO Wafa JOHAL, University of New South Wales
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T3 (Capri, 2F)

Description

The research on Artificial Intelligence (AI) in education has seen significant growth in recent years, as educators and researchers explore the potential of this technology to enhance and transform the learning process. Research in this area covers a wide range of topics, including the use of AI for personalized learning, the development of educational games and simulations, and more recently the integration of AI-powered social robots into the classroom. In this 8th edition of the Robots for Learning (R4L) workshop, researchers and educators will be invited to discuss the potential of using AI in their research. Different types of AI will be discussed, looking at their advantages, best practices and potential risks in using AI tools to support robots in educational settings.

Researching Diversity and Inclusion in Human-Robot Interaction: Methodological, Technical and Ethical Considerations (divHRI)

Organizers	**Carolin Straßmann***, University of Applied Sciences ruhr West Sabrina C. Eimler, Hochschule Ruhr West, University of Applied Sciences Alexander Arntz, University of Applied Sciences Ruhr West Andrè Helgert, University of Applied Sciences Ruhr West Lara Timm, University of Applied Sciences Ruhr West
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T4 (Sydney, 2F)

Description (Hybrid)**

This workshop deals with methodological aspects of the investigation of diversity in human-robot interaction. Especially for application fields in public spaces, the target audience in human-robot interaction varies and robots meet people with a wide range of diversity features. In order to create a human-centered interaction, these features need to be taken into account, as a) robots must be able to interact with any user independent of their individual characteristics and b) it is desirable that the robot can adapt to specific needs in dependence of these individual characteristics. However, there are still various challenges in detecting (cf. algorithmic biases), interacting, and responding to various audiences that need to be addressed in future research considering ethical, technical, and methodological aspects. With this workshop, we like to discuss state-of-the-art challenges, possible solutions, and best practices.

Multidisciplinary Perspectives on Context-aware Embodied Spoken Interactions (MP-COSIN)

Organizers	**Ronald Cumbal***, KTH Royal Institute of Technology Agnes Axelsson, KTH Royal Institute of Technology Hannah Pelikan, Linköping University Divesh Lala, Kyoto University Merle Reimann, Vrije Universiteit Amsterdam Felix Gervits, DEVCOM Army Research Laboratory Olov Engwall, KTH Royal Institute of Technology
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T5 (Miami, 2F)

Description (Hybrid)**

The workshop on Multidisciplinary Perspectives on Context-aware embodied Spoken Interactions (MP-COSIN),proposed to be held at the RO-MAN 2023 conference in Busan, Korea, aims to gather researchers in the fields of speech technology, dialogue systems, and human-robot interaction to discuss the challenges of creating interactive agents that can take their environment, context and own embodiment into account to make the interactions with their users convincing. While spoken interactions with embodied agents already incorporate complicated challenges to deploy systems in the real world, the addition of a dynamically evolving context during the interaction brings higher complexity to this task. As these types of interactions can fail or succeed in many different ways, it is important to bring together different fields to share experiences in addressing this research path. In particular, communities with a history of research on spoken dialogue systems, conversation analysis, and conversational user interfaces can provide a common ground on the notion of context-awareness and how it could be developed for robotics and human-robot interaction.

WARN: Weighting the benefits of Autonomous Robot PersoNalization

Organizers	**Francesco Vigni***, Interdepartmental Center for Advances in Robotic Surgery - ICAROS Antonio Andriella, Pal Robotics Alyssa Kubota, University of California San Diego Silvia Rossi, Universita' di Napoli Federico II
Time/ Location	Aug 31, 2023 13:10~16:10 (180') | Track T6 (Venice, 2F)

Description (Hybrid)**

The importance of personalisation in Human-Robot Interaction has already shown its advantages in multiple scenarios and will become a prevalent direction for the field.

Personalisation has the potential to significantly improve short- and long-term interactions in a variety of real-world scenarios by fostering trust and rapport, increasing adherence to the interaction, increasing engagement through tailored content, and improving task performance.

As a result, deploying robots capable of doing so requires the manufacturers to model reasoning and perceptual capabilities.

However, we need to ponder whether and to what extent personalisation can benefit the interactions, and ultimately the users. Indeed, cultural biases, gender and age stereotypes might be amplified by robots that are developed as end-to-end systems for conducting social interactions. It is therefore of utmost importance to discuss contexts and environments in which personalisation is desired or required for the field and those in which it should be avoided. The contrast occurs between data-driven vs knowledge-driven approaches, in which the first can empower robots with personalisation skills while the latter can be better suited for explaining the decision process of the robot's behaviour.

The workshop focuses on the benefits and drawbacks of personalisation and behavioural adaptation in social HRI.

In particular, this workshop aims at bringing together a multidisciplinary group of researchers from areas including, but not limited to, psychology, neuroscience, computer science, robotics, and sociology, to share and discuss current approaches to empowering social assistive robots with adaptive and learning capabilities in order to foster research and development of robotic solutions specifically designed for meeting the individual's unique needs.

VI Robot Design Competition

The Robot Design Competition builds on the conference theme of Designing a New Bridge for H-R-I. Entrants developed interactive robotic objects to enhance humans' H (health, happiness, and hope), R (recovery and reconnection), and/or I (interface and interaction).

Their goal was to identify and focus on a specific interaction context, develop their own interactive robotic objects, and create scenarios to illustrate how their robots fit within the lives of the humans involved, with an emphasis on sharing their design process/journey.

Schedule	Date	Location & Time
Exhibition	Aug 29(Tue.) ~ 31(Thur.)	Lobby(2F), 09:00 am~
Project presentations:	Aug 30(Wed.)	Grand Ballroom(2F), 10:20 am~12:10 pm
Interactive poster session	Aug 30(Wed.)	Lobby(2F), 12:10 pm~12:50 pm
Awards	Aug 31(Thur.)	Grand Ballroom(2F), 11:50 am

Finalists

Title	Team	Affiliation
Robotic Assistance to Reconnect the Daily Life Interactions for Sensing, Locomotion and Manipulation from Paralysis	Shouren Huang, Sune Lundø Sørensen, Yongpeng Cao	Tokyo University of Science, University of Southern Denmark, The University of Tokyo
Intelligent Guide in the Mall: Machine or Co-Worker?	Dominique Deuff, Ioana Ocnarescu, Isabelle Milleville, Pablo Felipe Osorio Marin, Gentiane Venture	Orange, Strate Research, LS2N, The University of Tokyo
Ask the Mall Guide: Where to Take Photos?	Run Shan, Huijia Xu, Qiyi Fu, Xiaohua Sun	Tongji University
Can a Robject Express Moods in Long-Distance Relationships?	Hisham Khalil, Pablo Osorio, Daisuke Takamatsu, Akiyoshi Hayashi, Gentiane Venture	The University of Tokyo, Tokyo University of Agriculture and Technology
Interaction Design for the Home Robotic Desk Using Feedforward-Feedback BidirectionalLoop	Yuxin Zhao, Kechun Li, Jihang Li, Yuge Bai, Xiaohua Sun	Tongji University
Petting Pen for Stress Awareness and Management in Children	Jing Li, Pinhao Wang, Emilia Barakova, Jun Hu	Eindhoven University of Technology
Book Toki : Interactive Reading Mate Robot	Wooin Jang, Dabin Lee, Huisung Lee	UNIST
Social Plantroid: Turning Plants into Pets	Antonio Galiza Cerdeira Gonzalez, Ikuo Mizuuchi	Tokyo University of Agriculture and Technology
Design and Development of a Patting Robot for Infant Caregivers	Seoyeon Yoon	Seoul National University
PO'ME: A Dog-Type Social Robot for Motivating Children's Reading Activities	Seungbin Jeong, Jin-young Moon, Minjae Sung, Yongseop Kwon, Hui Sung Lee	UNIST
Yachabot: Interactive Blocks for Learning Math	Adrian Anhuaman, Carlos Granados, Itala Latorre, Sebastian Chion, William Meza	Pontifical Catholic University of Peru

VII Technical Program

Technical Program for Tuesday August 29, 2023

TuAT1	Track T1 (Sicily, 1F)
HRI in Academia and Industry: Bridging the Gap I (Special Session)	
Chair: Eum, Younseal	Sookmyung Women's University
10:20-10:30	TuAT1.1
Guidelines for a Human-Robot Interaction Specification Language	
Porfirio, David (U.S. Naval Research Laboratory); Roberts, Mark (Naval Research Laboratory); Hiatt, Laura M. (Naval Research Laboratory)	
10:30-10:40	TuAT1.2
Tactical Empathy for Long-Term HRI in Commercial In-Home Robots: An Academic Approach to Building a Bridge to the HRI Industry	
Haring, Kerstin Sophie (University of Denver)	
10:40-10:50	TuAT1.3
The Road Ahead: Advancing Interactions between Autonomous Vehicles, Pedestrians, and Other Road Users	
Block, Avram (MassRobotics); Joshi, Swapna (Northeastern University); Tabone, Wilbert (Delft University of Technology); Pandya, Aryaman (Motional); Lee, Seonghee (Stanford University); Patil, Vaidehi (Carnegie Mellon University); Britten, Nicholas (Virginia Tech); Schmitt, Paul (Motional)	
10:50-11:00	TuAT1.4
Community in HRI: Extending Academic and Industry Collaboration	
Joshi, Swapna (Northeastern University)	
11:00-11:10	TuAT1.5
A Framework for Realistic Simulation of Daily Human Activity	
Idrees, Ifrah (Brown University); Singh, Siddharth (Amazon); Xu, Kerui (Amazon); Glas, Dylan F. (Amazon)	

TuAT3	Track T3 (Capri, 2F)
Creating Human-Robot Relationships (Regular Session)	
Chair: Jin, Sangrok	Pusan National University

10:20-10:30 TuAT3.1

Effects of Robots' "Body Torque" on Participation and Sustaining Multi-Person Conversations

Takagi, Karebu (Shizuoka University); Sakamoto, Takafumi (Shizuoka University); Ichikawa, Jun (Shizuoka University); Takeuchi, Yugo (Shizuoka University)

10:30-10:40 TuAT3.2

From Research to Design: Developing the Social Robotic Persuasive Design Cards and Its Techniques

Liu, Baisong (Eindhoven University of Technology); Tetteroo, Daniel (Eindhoven University of Technology); Markopoulos, Panos (Eindhoven University of Technology)

10:40-10:50 TuAT3.3

Improvisation ≠ Randomness: A Study on Playful Rule-Based Human-Robot Interactions

Alcubilla Troughton, Irene (Utrecht University); Von Kentzinsky, Hendrik (Free University of Amsterdam); Bleeker, Maaike (Utrecht University); Baraka, Kim (Vrije Universiteit Amsterdam)

10:50-11:00 TuAT3.4

Scale Development of Anxiety Toward Robots in Consumer Robotics: An Approach Using Item Response Theory

Song, Christina Soyoung (Illinois State University); Lee, Jinha (Indiana Wesleyan University, DeVoe Division of Business); Jo, Bruce (Tennessee Technological University)

11:00-11:10 TuAT3.5

ChatHRC: Personalized Human-Robot Collaboration Using Fuzzy Reinforcement Learning with Natural Language Rewards

Hu, Zhe (City University of Hong Kong); Lu, Weifeng (City University of Hong Kong); Zheng, Yu (Tencent); Pan, Jia (University of Hong Kong)

11:10-11:20 TuAT3.6

Robotic Backchanneling in Online Conversation Facilitation: A Cross-Generational Study

Kobuki, Sota (Tokyo Institute of Technology); Seaborn, Katie (Tokyo Institute of Technology); Tokunaga, Seiki (RIKEN); Fukumori, Kosuke (Tokyo University of Agriculture and Technology); Hidaka, Shun (Tokyo Institute of Technology); Tamura, Kazuhiro (Riken); Inoue, Koji (Kyoto University); Kawahara, Tatsuya (Kyoto Univ); Otake-Matsuura, Mihoko (RIKEN)

TuAT4 Track T4 (Sydney, 2F)

Non-Verbal Cues and Expressiveness I (Regular Session)

Chair: Kang, Dahyun — Korea Institute of Science and Technology

10:20-10:30 TuAT4.1

Show Me What to Pick: Pointing versus Spatial Gestures for Conveying Intent

Surendran, Vidullan (Pennsylvania State University); Wagner, Alan Richard (Penn State University)

10:30-10:40 TuAT4.2

The Robot in the Room: Influence of Robot Facial Expressions and Gaze on Human-Human-Robot Collaboration

Fu, Di (University of Hamburg); Abawi, Fares (Universität Hamburg); Wermter, Stefan (University of Hamburg)

10:40-10:50 TuAT4.3

Recognizing Diver Hand Gestures for Human to Robot Communication Underwater

Codd-Downey, Robert (York University); Jenkin, Michael (York University)

10:50-11:00 TuAT4.4

Exploring the Use of Colored Ambient Lights to Convey Emotional Cues with Conversational Agents: An Experimental Study

Straßmann, Carolin (University of Applied Sciences Ruhr West); Helgert, Andrè (University of Applied Sciences Ruhr West); Breil, Valentin (University of Applied Sciences Ruhr West); Settelmayer, Lina (University of Applied Sciences Ruhr West); Diehl, Inga (University of Applied Sciences Ruhr West)

11:00-11:10 TuAT4.5

Can a Gender-Ambiguous Voice Reduce Gender Stereotypes in Human-Robot Interactions?

Torre, Ilaria (Chalmers University of Technology); Lagerstedt, Erik (University of Skövde); Dennler, Nathaniel (University of Southern California); Seaborn, Katie (Tokyo Institute of Technology); Leite, Iolanda (KTH Royal Institute of Technology); Szekely, Eva (KTH Royal Institute of Technology)

11:10-11:20 TuAT4.6

Improving Sign Language Understanding Introducing Label Smoothing

Tan, Sihan (Tokyo Institute of Technology); Khan, Nabeela Khanum (Tokyo Institute of Technology); Itoyama, Katsutoshi (Tokyo Institute of Technology); Nakadai, Kazuhiro (Tokyo Institute of Technology)

TuAT5	Track T5 (Miami, 2F)
Innovative Robot Designs I (Regular Session)	
Chair: Sousa Silva, Rafael	Colorado School of Mines

10:20-10:30 TuAT5.1

Single Actuator Tendon Driven Two Finger Linkage Gripper with Strong Pinch and Adaptable Cylindrical Grasp

Unde, Jayant (Nagoya University); Colan, Jacinto (Nagoya University); Zhu, Yaonan (Nagoya University); Aoyama, Tadayoshi (Nagoya University); Hasegawa, Yasuhisa (Nagoya University)

10:30-10:40 TuAT5.2

Worth the Wait: Understanding How the Benefits of Performative Autonomy Depend on Communication Latency

Sousa Silva, Rafael (Colorado School of Mines); Lieng, Michelle (Colorado School of Mines); Muly, Emil (Colorado School of Mines); Williams, Tom (Colorado School of Mines)

10:40-10:50 TuAT5.3

Yousu: A Mythical Character Robot Design for Public Scene Interaction

Sun, Qirui (Tsinghua University); Guo, Yijie (Tsinghua University); Yao, Zhihao (Tsinghua University); Mi, Haipeng (Tsinghua University)

10:50-11:00 TuAT5.4

Development of a 3-DOF Interactive Modular Robot with Human-Like Head Motions

Moon, Chaerim (University of Illinois, Urbana-Champaign); Yamsani, Sankalp (University of Illinois Urbana-Champaign); Kim, Joohyung (University of Illinois at Urbana-Champaign)

11:00-11:10 TuAT5.5

HRITI - Human Robot Interaction with Translational Intelligence

Mahale, Gopalkrishna (PES University); Subramanian, Karpagavalli (PES University); Srikantan, Maalavika (PES University); kulkarni, Vaishnavi (Pes University); R, Rathan (PES University); Tripathi, Shikha (Faculty of Engineering PES University, Bangalore, India)

11:10-11:20 TuAT5.7

Proposal of a New Performance Partner: "Soft Flying Robot"

Shido, Hiroki (Waseda University); Nishi, Hiroko (Toyo Eiwa University); ISHII, Hiroyuki (Waseda University)

TuAT6 Track T6 (Venice, 2F)

Novel Interfaces and Interaction Modalities I (Regular Session)

Chair: Park, Juyoun — Korea Institute of Science and Technology

10:20-10:30 — TuAT6.1

Hands-Free Interface Using Breath for Robot-Assisted Operation

Imai, Atsuhiro (Kogakuin University); Misaki, Daigo (Kogakuin University)

10:30-10:40 — TuAT6.2

A Gesture-Based Multimodal Interface for Human-Robot Interaction

Uimonen, Mikael Petro Juhana (VTT Technical Research Centre of Finland); Kemppi, Paul Mikael (Mr); Hakanen, Taru (VTT Technical Research Centre of Finland)

10:40-10:50 — TuAT6.3

Design and Validation of a Torso-Dynamics Estimation System (TES) for Hands-Free Physical Human-Robot Interaction

Song, Seung Yun (University of Illinois at Urbana-Champaign); Guo, Yixiang (University of Illinois at Urbana-Champaign); Yuan, Chentai (University of Illinois at Urbana-Champaign); Marin, Nadja (The University of Illinois at Urbana-Champaign); Xiao, Chenzhang (University of Illinois at Urbana-Champaign); Bleakney, Adam (University of Illinois); Elliott, Jeannette (University of Illinois); Ramos, Joao (University of Illinois at Urbana-Champaign); Hsiao-Wecksler, Elizabeth (University of Illinois at Urbana-Champaign)

10:50-11:00 — TuAT6.4

Intuitive Arm-Pointing Based Home-Appliance Control from Multiple Camera Views

Yokota, Masae (Chuo University); Majima, Soichiro (Chuo University); Pathak, Sarthak (Chuo University); Umeda, Kazunori (Chuo University)

11:00-11:10 — TuAT6.5

Adapting Behavior and Persistence Via Reinforcement and Self-Emotion Mediated Exploration in a Social Robot

Assunção, Gustavo (Institute of Systems and Robotics - University of Coimbra); Sorrentino, Alessandra (University of Florence); Dias, Jorge (Khalifa University); Castelo-Branco, Miguel (University of Coimbra, Institute for Biomedical Imaging and Tran); Menezes, Paulo (Institute of Systems and Robotics); Cavallo, Filippo (University of Florence)

11:10-11:20 — TuAT6.6

Characterizing the Sense of Embodiment: The Development of a Sensorimotor Robotic Platform

Hong, Kihun (University of California, Davis); Trieu, Patrick (University of California, Davis); Schofield, Jonathon (University of California, Davis)

TuBT1 Track T1 (Sicily, 1F)

HRI in Academia and Industry: Bridging the Gap II (Special Session)

Chair: Eum, Younseal — Sookmyung Women's University

11:30-11:40 TuBT1.1

Developing Autonomous Behaviors for a Consumer Robot to Be Near People in the Home

Lee, Jin Joo (Amazon); Atrash, Amin (Amazon Lab126); Glas, Dylan F. (Amazon); Fu, Hanxiao (Amazon)

11:40-11:50 TuBT1.2

Using Decision Support in Human-In-The-Loop Experimental Design Toward Building Trustworthy Autonomous Systems

Gregory, Jason M. (US Army Research Laboratory); Sanchez, Felix (Booz Allen Hamilton); Lancaster, Eli (Booz Allen Hamilton); Agha-mohammadi, Ali-akbar (NASA-JPL, Caltech); Gupta, Satyandra K. (University of Southern California)

11:50-12:00 TuBT1.3

Defining Interaction As Coordination Benefits Both HRI Research and Robot Development: Entering Service Interactions

Fischer, Kerstin (University of Southern Denmark)

12:00-12:10 TuBT1.4

Robotic Tutors for Nurse Training: Opportunities for HRI Researchers

Quintero-Peña, Carlos (Rice University); Qian, Peizhu (Rice University); Fontenot, Nicole (Houston Methodist); Chen, Hsin-Mei (Houston Methodist); Hamlin, Shannan (Houston Methodist); Kavraki, Lydia (Rice University); Unhelkar, Vaibhav V. (Rice University)

12:10-12:20 TuBT1.5

Teaching a Robot Where to Park: A Scalable Crowdsourcing Approach

Bryant, De'Aira (Georgia Institute of Technology); Etiene, Tiago (Amazon Lab126); Howard, Ayanna (Georgia Institute of Technology); Smart, William (Oregon State University); Glas, Dylan F. (Amazon)

12:20-12:30 TuBT1.6

From Assistive Devices to Manufacturing Cobot Swarms

Li, Monica, Mengqi (Polytechnique Montreal); Belzile, Bruno (ETS Montreal); Imran, Ali (École De Technologie Supérieure ÉTS); Birglen, Lionel (Ecole Polytechnique De Montreal); Beltrame, Giovanni (Ecole Polytechnique De Montreal); St-Onge, David (Ecole De Technologie Superieure)

TuBT3 Track T3 (Capri, 2F)

Assistive Robotics I (Regular Session)

Chair: Lee, Jongwon — Korea Institute of Science and Technology

11:30-11:40 TuBT3.1

Haptically-Displayed Proprioceptive Feedback Via Simultaneous Rotary Skin Stretch and Vibrotactile Stimulation

Lima, Bryanna (Georgia Institute of Technology); Hammond III, Frank L. (Georgia Institute of Technology)

11:40-11:50 TuBT3.2

Using the OptiBand to Increase the Long-Range Spatial Perception of People with Vision Disabilities

Quick, Ryan Racel (Oregon State University); Bontula, Anisha (Oregon State University); Puente, Karina (Oregon State University); Fitter, Naomi T. (Oregon State University)

11:50-12:00 TuBT3.3

Tracker: Model-Based Reinforcement Learning for Tracking Control of Human Finger Attached with Thin McKibben Muscles

Saito, Daichi (Tokyo Institute of Technology); Nagatomo, Eri (Tokyo Institute of Technology); Pardomuan, Jefferson (Tokyo Institute of Technology); Koike, Hideki (Tokyo Institute of Technology)

12:00-12:10 TuBT3.4

An EMG-Based Spatio-Spectro-Temporal Index for Muscle Fatigue Quantification

Dasanayake, Nimantha (Universiy of Moratuwa); Gopura, R.A.R.C. (Department of Mechanical Engineering); Ranaweera, Pubudu (University of Moratuwa); Lalitharatne, Thilina Dulantha (Queen Mary University of London)

12:10-12:20 TuBT3.5

Walking Outdoor with a Zoomorphic Mobile Robot: Exploration of Robot-Assisted Physical Activities for Older Adults

Wu, Chia-Hsin (Tampere University); Ahtinen, Aino (Tampere University); Vaananen, Kaisa (Tampere University)

12:20-12:30 TuBT3.6

Understanding Human-Robot Teamwork in the Wild: The Difference between Success and Failure for Mobile Robots in Hospitals

Tornbjerg Eriksen, Kristina (Aalborg University); Bodenhagen, Leon (University of Southern Denmark)

TuBT4 Track T4 (Sydney, 2F)

Non-Verbal Cues and Expressiveness II (Regular Session)

Chair: Celiktutan, Oya — King's College London

11:30-11:40 — TuBT4.1

To Cross or Not-To-Cross: A Robotic Object for Mediating Interactions between Autonomous Vehicles and Pedestrians

Chakravarthi Kumaran, Srivatsan (Media Innovation Lab, School of Communication, Reichman Universi); Oberlender, Agam (Media Innovation Lab, School of Communication, Reichman Universi); Grishko, Andrey (Media Innovation Lab, Interdisciplinary Center Herzliya); Megidish, Benny (Media Innovation Lab, the Interdisciplinary Center (IDC) Herzliy); Erel, Hadas (Media Innovation Lab, Interdisciplinary Center Herzliya)

11:40-11:50 — TuBT4.2

Advantages of Multimodal versus Verbal-Only Robot-To-Human Communication with an Anthropomorphic Robotic Mock Driver

Schreiter, Tim (Örebro University); Morillo-Mendez, Lucas (Örebro University); Chadalavada, Ravi Teja (Örebro University); Rudenko, Andrey (Robert Bosch GmbH); Billing, Erik Alexander (University of Skövde); Magnusson, Martin (Örebro University); Arras, Kai Oliver (Bosch Research); Lilienthal, Achim J. (Orebro University)

11:50-12:00 — TuBT4.3

A Study on Customer's Perception of Robot Nonverbal Communication Skills in a Service Environment

Tuyen, Nguyen Tan Viet (King's College London); Okazaki, Shintaro (King's College London); Celiktutan, Oya (King's College London)

12:00-12:10 — TuBT4.4

Hey Robot, It's Not What You Say, It's How You Say It

Miniotaite, Jura (KTH Royal Institute of Technology); Wang, Siyang (KTH, Royal Institute of Technology); Beskow, Jonas (KTH); Gustafson, Joakim (KTH); Szekely, Eva (KTH Royal Institute of Technology); Pereira, Andre (KTH Royal Institute of Technology)

12:10-12:20 — TuBT4.5

Longitudinal Evolution of Coachees' Behavioural Responses to Interaction Ruptures in Robotic Positive Psychology Coaching

Spitale, Micol (University of Cambridge); Axelsson, Minja (University of Cambridge); Kara, Neval (Cankaya University); Gunes, Hatice (University of Cambridge)

12:20-12:30 — TuBT4.6

Touch Me Right: Lateral Preferences During Touch in Human-Robot-Interactions

Hitzmann, Arne (Advanced Telecommunications Research Institute International); Sumioka, Hidenobu (ATR); Shiomi, Masahiro (ATR)

TuBT5 Track T5 (Miami, 2F)

Innovative Robot Designs II (Regular Session)

Chair: Tanaka, Fumihide — University of Tsukuba

11:30-11:40 — TuBT5.1

Orthrus: A Dual-Arm Quadrupedal Robot for Mobile Manipulation and Entertainment Applications

Yamsani, Sankalp (University of Illinois Urbana-Champaign); Taylor, Sean (University of Illinois at Urbana Champaign); Shin, Kazuki (University of Illinois at Urbana-Champaign); Hong, Jooyoung (University of Illinois at Urbana-Champaign); Mathur, Dhruv (John Deere Intelligent Solutions Group); Gim, Kevin (University of Illinois, Urbana-Champaign); Kim, Joohyung (University of Illinois at Urbana-Champaign)

11:40-11:50 — TuBT5.2

A robotIc Radial palpatIon mechaniSm for Breast Examination (IRIS)

Jenkinson, George (University of Bristol); Tiemann, Karl (University of Bristol); Papathanasiou, Angeliki (University of Bristol); Bewley, Jonny (University of Bristol); Conn, Andrew (University of Bristol); Tzemanaki, Antonia (University of Bristol)

11:50-12:00 — TuBT5.3

A Two-Layer Haptic Device for Presenting a Wide Range of Softness and Hardness Using a Pneumatic Balloon and a Mechanical Piston

Sasaki, Takuya (Nara Institute of Science and Technology); Hagimori, Daiki (Nara Institute of Science and Technology); Perusquia-Hernandez, Monica (Nara Institute of Science and Technolgy); Isoyama, Naoya (Nara Institute of Science and Technology); Uchiyama, Hideaki (Nara Institute of Science and Technology); Kiyokawa, Kiyoshi (Osaka University); Kuroda, Yoshihiro (University of Tsukuba)

12:00-12:10 — TuBT5.4

Exploring the Design of Robot Mediation with Bodily Contact for Remote Conflict

Wang, Ruhan (Tsinghua University); Li, Chih-Heng (Tsinghua University); Guo, Yijie (Tsinghua University); Tanaka, Fumihide (University of Tsukuba); Mi, Haipeng (Tsinghua University)

12:10-12:20 — TuBT5.5

Pneumatically Driven Ophthalmologic Surgery Robot with Intraocular Pressure Control

Sogabe, Maina (The University of Tokyo); Ito, Keiya (The University of Tokyo); Miyazaki, Tetsuro (The University of Tokyo); Ito, Norihiko (Tottori University); Kawashima, Kenji (The University of Tokyo)

12:20-12:30 — TuBT5.6

Open-Ended Multi-Modal Relational Reasoning for Video Question Answering

Luo, Haozheng (Northwestern University); Ruiyang, Qin (Georgia Institute of Technology); Xu, Chenwei (Northwstern University); Ye, Guo (Northwestern University); Luo, Zening (Northwestern University)

12:30-12:40 — TuBT5.7

BioMORF: A Soft Robotic Skin to Increase Biomorphism and Enable Nonverbal Communication

Bering Christiansen, Mads (University of Southern Denmark); Asawalertsak, Naris (Vidyasirimedhi Institute of Science and Technology (VISTEC)); Do, Cao Danh (University of Southern Denmark); Nantareekurn, Worameth (Vidyasirimedhi Institute of Science and Technology); Rafsanjani, Ahmad (University of Southern Denmark); Manoonpong, Poramate (Vidyasirimedhi Institute of Science and Technology (VISTEC)); Jørgensen, Jonas (Center for Soft Robotics, the Maersk Mc-Kinney Moller Institute,)

TuBT6 Track T6 (Venice, 2F)

Novel Interfaces and Interaction Modalities II (Regular Session)

Chair: Kyung, Ki-Uk — Korea Advanced Institute of Science & Technology (KAIST)

11:30-11:40 TuBT6.1

I^3: Interactive Iterative Improvement for Few-Shot Action Segmentation

Gassen, Martina (Technical University of Darmstadt); Metzler, Frederic (Technical University Darmstadt); Prescher, Erik (Technical University Darmstadt); Scherf, Lisa (Technische Universität Darmstadt); Prasad, Vignesh (TU Darmstadt); Kaiser, Felix (Technical University of Darmstadt); Koert, Dorothea (Technische Universitaet Darmstadt)

11:40-11:50 TuBT6.2

Considerations on Interaction with Manipulator in Virtual Reality Teleoperation Interface for Rescue Robots

Kanazawa, Kotaro (Nagoya Institute of Technology); Sato, Noritaka (Nagoya Institute of Technology); Morita, Yoshifumi (Nagoya Institute of Technology)

11:50-12:00 TuBT6.3

Feeling the Slope? Teleoperation of a Mobile Robot Using a 7DOF Haptic Device with Attitude Feedback

Luz, Rute (Instituto Superior Técnico, Institute of Systems and Robotics); Pereira, Aaron (German Aerospace Center (DLR)); Corujeira, Jessica (Instituto Superior Técnico, Universidade De Lisboa); Krueger, Thomas (European Space Agency); Beck, Jacob (ESA); den Exter, Emiel (ESA Human Robot Interaction Lab); Chupin, Thibaud (European Space Agency); Silva, José Luís (Instituto Universitário De Lisboa (ISCTE-IUL), ISTAR-IUL and Mad); VENTURA, Rodrigo (Instituto Superior Técnico)

12:00-12:10 TuBT6.4

Object Identification Using Augmented Reality with Haptic Feedback

Akita, Emmanuel (The University of Texas at Austin); Regal, Frank (The University of Texas at Austin); Torres, Kevin (University of Texas at Austin, Nuclear and Applied Robotics Grou); Majewicz Fey, Ann (University of Texas at Austin); Pryor, Mitchell (University of Texas)

12:10-12:20 TuBT6.5

Speech-Gesture GAN: Gesture Generation for Robots and Embodied Agents

Liu, Carson Yu (University of New South Wales); Mohammadi, Gelareh (University of New South Wales); Song, Yang (University of New South Wales); JOHAL, Wafa (University of New South Wales)

12:20-12:30 TuBT6.6

Let Me Be Your Service Robot: Exploring Early User Experiences of Human-Robot Collaboration for Service Domains

Golchinfar, David (University of Applied Sciences Bonn-Rhein-Sieg); Vaziri, Daryoush (University of Applied Sciences Bonn-Rhein-Sieg); Hennekeuser, Darius (University of Applied Sciences Bonn-Rhein-Sieg); Stevens, Gunnar (University of Siegens); Schreiber, Dirk (University of Applied Sciences Bonn-Rhein-Sieg)

TuCT1	Track T1 (Sicily, 1F)
Humanoid Robots in Healthcare: Exploring Real World Applications (Special Session)	
Chair: Sørensen, Linda	Sunnaas Hospital
Co-Chair: Markelius, Alva Jamina Ka	University of Cambridge
14:00-14:10	TuCT1.1
Health Professionals' Views on the Use of Social Robots with Vulnerable Users: A Scenario-Based Qualitative Study Using Story Dialogue Method	
Saplacan, Diana (University of Oslo); Schulz, Trenton (Norwegian Computing Center); Torresen, Jim (University of Oslo); Pajalic, Zada (VID Specialized Univeristy)	
14:10-14:20	TuCT1.2
Humanoid Robots in Healthcare: Lessons Learned from an Innovation Project	
Fernandes, Alexandra (Institute for Energy Technology); Reegård, Kine (Institute for Energy Technology); Kaarstad, Magnhild (Institute for Energy Technology); Eitrheim, Maren (Institute for Energy Technology); Bloch, Marten (Institute for Energy Technology)	
14:20-14:30	TuCT1.3
Challenges of Deploying Assistive Robots in Real-Life Scenarios: An Industrial Perspective	
Cooper, Sara (Honda Research Institute Japan); Ros, Raquel (PAL Robotics); Lemaignan, Séverin (PAL Robotics)	
14:30-14:40	TuCT1.4
The Robot Will Feel You Now: The Ethics of Artificial Emotional Intelligence in Sex Robots	
Sica, Arianna (Østfold University College)	

TuCT3	Track T3 (Capri, 2F)
Assistive Robotics II (Regular Session)	
Chair: Winkle, Katie	Uppsala University

14:00-14:10 TuCT3.1

Autonomous or Manual Control? Qualitative Analysis of Control Perceptions from Current Robotic Arm Owners

Wang, Eileen (University of Pittsburgh); Kane Styler, Breelyn (University of Pittsburgh, Human Engineering Research Laboratorie); Ding, Dan (University of Pittsburgh)

14:10-14:20 TuCT3.2

The Effect of Tactor Composition and Vibrotactile Stimulation on Sensory Memory for a Haptic Feedback Display

Kelly, Erin (Georgia Institute of Technology); Wheaton, Lewis (Georgia Tech); Hammond III, Frank L. (Georgia Institute of Technology)

14:20-14:30 TuCT3.3

Flexible Control and Task Manager System for Non-Contact Delivery Robots in COVID-19 Isolated Facilities

Cho, SungJoon (Korea Institute of Science and Technology); Lee, Yisoo (Korea Institute of Science and Technology); Kim, KangGeon (Korea Institute of Science and Technology); Ihn, Yong Seok (Korea Institute of Science and Technology); Kim, Jun-Sik (Korea Institute of Science & Technology); YOU, BUM JAE (KIST (Korea Institue of Science and Technology))

14:30-14:40 TuCT3.4

End-To-End Planner for Self-Reconfigurable Modular Robots Collaborative Objects Manipulation, Transport and Handover to Human Application

Morel, Aurélien (Sorbonne Univesité, France / Ecole Polytechnique Fédérale De Lau); Bolotnikova, Anastasia (EPFL); Ju, Celinna (EPFL); Rabaey, Jan M. (University of California: Berkeley); Ijspeert, Auke (EPFL)

TuCT4 Track T4 (Sydney, 2F)

Applications of Social Robots I (Regular Session)

Chair: Takashio, Kazunori — Keio University

14:00-14:10 — TuCT4.1

The Future of Home Appliances: A Study on the Robotic Toaster As a Domestic Social Robot

Ye, Meryl (Cornell University); Schneiders, Eike (University of Nottingham); Lee, Wen-Ying (Cornell University); Jung, Malte (Cornell University)

14:10-14:20 — TuCT4.2

Exploring Measures for Engagement in a Collaborative Game Using a Robot Play-Mediator

Azizi, Negin (University of Waterloo); Fan, Kevin (University of Waterloo); Jouaiti, Melanie (Imperial College London); Dautenhahn, Kerstin (University of Waterloo)

14:20-14:30 — TuCT4.3

Pepper on the Job: Applying Social Robots in Employee Training

Donnermann, Melissa (Julius-Maximilians University Wuerzburg); Rossin, Franziska (Julius-Maximilians-Universität Würzburg); Lugrin, Birgit (University of Wuerzburg)

14:30-14:40 — TuCT4.4

Autonomous UAV Navigation in Complex Environments Using Human Feedback

Karumanchi, Sambhu Harimanas (University of Illinois, Urbana-Champaign); Diddigi, Raghuram Bharadwaj (International Institute of Information Technology, Bangalore); K J, Prabuchandran (Indian Institute of Technology Dharwad); Bhatnagar, Shalabh (Indian Institute of Science, Bangalore)

TuCT5 Track T5 (Miami, 2F)

Motion Planning and Navigation in Human-Centered Environments I (Regular Session)

Chair: Kim, Soonkyum — Korea Institute of Science and Technology

14:00-14:10 TuCT5.1

Instance-Level Semantic Maps for Vision Language Navigation

Nanwani, Laksh (Robotics Research Center, IIIT Hyderabad, India); Agarwal, Anmol (International Institute of Information Technology - Hyderabad); Jain, Kanishk (IIIT Hyderabad); Prabhakar, Raghav (IIIT Hyderabad); Monis, Aaron (IIIT Hyderabad); Mathur, Aditya (IIIT Hyderabad); Jatavallabhula, Krishna Murthy (MIT); Abdul Hafez, A. H. (Hasan Kalyoncu Uiversity); Gandhi, Vineet (IIIT Hyderabad); Krishna, Madhava (IIIT Hyderabad)

14:10-14:20 TuCT5.2

Model-Based Imitation Learning for Real-Time Robot Navigation in Crowds

Moder, Martin (University Duisburg-Essen); Oezgan, Fatih (Universität Duisburg-Essen); Pauli, Josef (Universität Duisburg-Essen)

14:20-14:30 TuCT5.3

Robot Localization and Reconstruction Based on 3D Point Cloud

Chi, Peng (South China University of Technology); Wang, Zhenmin (South China University of Technology); Liao, Haipeng (South China University of Technology); Wu, Xiangmiao (South China University of Technology); Tian, Jiyu (South China University of Technology); Zhang, Qin (South China University of Technology)

14:30-14:40 TuCT5.4

Wearable Indoor UWB Localization Performance in Smartphone Carrying Contexts: An Investigative Study

Naheem, Khawar (Gwangju Institute of Science and Technology); Kim, Mun Sang (GIST)

TuCT6 Track T6 (Venice, 2F)

Novel Interfaces and Interaction Modalities III (Regular Session)

Chair: Lee, Hee Rin — Michigan State University

14:00-14:10 — TuCT6.1

Humans' Spatial Perspective-Taking When Interacting with a Robotic Arm

Abrini, Mouad (Sorbonne University); Auvray, Malika (ISIR, CNRS, Sorbonne-University); Chetouani, Mohamed (Sorbonne University)

14:10-14:20 — TuCT6.2

Successful Swarms: Operator Situational Awareness with Modelling and Verification at Runtime

Gu, Yue (University of Glasgow); Hunt, William (University of Southampton); Archibald, Blair (University of Glasgow); Xu, Mengwei (University of Glasgow); Sevegnani, Michele (School of Computing Science, University of Glasgow); Soorati, Mohammad Divband (University of Southampton)

14:20-14:30 — TuCT6.3

Detecting the Intention of Object Handover in Human-Robot Collaborations: An EEG Study

Rajabi, Nona (KTH Royal Institute of Technology); Khanna, Parag (KTH Royal Institute of Technology); Demir Kanik, Sumeyra Ummuhan (Ericsson Research); Yadollahi, Elmira (KTH); Vasco, Miguel (INESC-ID); Björkman, Mårten (KTH); Smith, Claes Christian (KTH Royal Institute of Technology); Kragic, Danica (KTH)

14:30-14:40 — TuCT6.4

Hands-Free Physical Human-Robot Interaction and Testing for Navigating a Virtual Ballbot

Song, Seung Yun (University of Illinois at Urbana-Champaign); Marin, Nadja (The University of Illinois at Urbana-Champaign); Xiao, Chenzhang (University of Illinois at Urbana-Champaign); Okubo, Ryu (University of Illinois Urbana-Champaign); Ramos, Joao (University of Illinois at Urbana-Champaign); Hsiao-Wecksler, Elizabeth T. (University of Illinois at Urbana-Champaign)

TuDT1 Track T1 (Sicily, 1F)

SARCHA: Socially Assistive Robots in Clinical and Healthcare Applications (Special Session)

Chair: Markelius, Alva Jamina Ka — Alva Jamina Ka: University of Cambridge

Co-Chair: Sørensen, Linda — Sunnaas Hospital

14:40-14:50 TuDT1.1

Robot-Mediated Job Interview Training for Individuals with ASD: A Pilot Study

Shahverdi, Pourya (Oakland University, Michigan, USA); Rousso, Katelyn (Intelligent Robotics Lab, Oakland University, Michigan); Bakhoda, Iman (Intelligent Robotics Laboratory, Oakland University, Michigan); Huang, Nathan (Oakland University); Rohrbeck, Kristin (Joanne and Ted Lindsay Foundation Autism Outreach Services (OUCA); Louie, Wing-Yue Geoffrey (Oakland University)

14:50-15:00 TuDT1.2

The Role of Conversational AI in Ageing and Dementia Care at Home: A Participatory Study

R. Lima, Maria (Imperial College London); Horrocks, Sophie (Imperial College London); Daniels, Sarah (Imperial College London); Lamptey, Moesha (Imperial College London); Harrison, Matthew (Helix Centre Imperial College London); Vaidyanathan, Ravi (Imperial College London)

15:00-15:10 TuDT1.3

Socially Assistive Robot "Sister Robot" As a Covid-19 Response and Its Future Plans in Health Care and Clinical Applications

Malla, Dipawoli (Islington College, London Met University Partnered, Manager - Cr); Bhandari, Pawan (Tribhvan University)

15:10-15:20 TuDT1.4

A Pilot Study on Factors of Social Attributes in Desktop-Size Interactive Robots

Sin Tung, Chan (The Hong Kong Polytechnic University); Chan, Chui Yi (The Hong Kong Polytechnic University); Chan, Sum Yee (The Hong Kong Polytechnic University); Zeng, Jingqiang (The Hong Kong Polytechnic University); Zhong, Junpei (The Hong Kong Polytechnic University)

TuDT3 Track T3 (Capri, 2F)

Assistive Robotics III (Regular Session)

Chair: Winkle, Katie — Uppsala University

14:40-14:50 TuDT3.1

What Can I Help You With: Towards Task-Independent Detection of Intentions for Interaction in a Human-Robot Environment

Trick, Susanne (Technische Universität Darmstadt); Lott, Vilja (Technische Universität Darmstadt); Scherf, Lisa (Technische Universität Darmstadt); Rothkopf, Constantin (Frankfurt Institute for Advanced Studies); Koert, Dorothea (Technische Universitaet Darmstadt)

14:50-15:00 TuDT3.2

Towards Realistic Prosthetic Gait Simulations: Enhancing the Accuracy of OpenSim Analysis by Integrating the Transfemoral Prosthesis Model

Ryu, HyungSeok (Gwangju Institute of Science and Technology(GIST)); Hong, Woolim (North Carolina State University); Hur, Pilwon (Gwangju Institute of Science and Technology)

15:00-15:10 TuDT3.3

Differing Care Giver and Care Receiver Perceptions of Robot Agency in an In-Home Socially Assistive Robot for Exercise Engagement

Winkle, Katie (Uppsala University); Moradbakhti, Laura (Imperial College London)

15:10-15:20 TuDT3.4

An End-To-End Human Simulator for Task-Oriented Multimodal Human-Robot Collaboration

Mehri Shervedani, Afagh (University of Illinois Chicago); Li, Siyu (University of Illinois at Chicago); Monaikul, Natawut (University of Illinois at Chicago); Abbasi, Bahareh (California State University - Channel Island); Di Eugenio, Barbara (University of Illinois at Chicago); Zefran, Milos (University of Illinois at Chicago)

TuDT4	Track T4 (Sydney, 2F)
Applications of Social Robots II (Regular Session)	
Chair: Lugrin, Birgit	University of Wuerzburg
14:40-14:50	TuDT4.1
Individual Squash Training Is More Effective and Social with a Humanoid Robotic Coach	
Ross, Martin Keith (Heriot-Watt University); Broz, Frank (TU Delft); Baillie, Lynne (Heriot-Watt University)	
14:50-15:00	TuDT4.2
Influencing Health-Related Decision Making and Therapeutic Alliance with Robot Mobility and Deixis	
Terzioglu, Yunus (Northeastern University); Rebello, Keith (Northeastern University); Bickmore, Timothy (Northeastern University)	
15:00-15:10	TuDT4.3
Face Robot Performing Interaction with Emphasis on Eye Blink Entrainment	
Iimori, Masato (Keio University); Furuya, Yuki (Keio University); Takashio, Kazunori (Keio University)	
15:10-15:20	TuDT4.4
Investigating the Influence of Task-Dependent and Task-Independent Robot Behavior on the Impression of Robots and the User Experience	
Chamoto, Yuki (Ritsumeikan University); Okafuji, Yuki (CyberAgent, Inc); Matsumura, Kohei (Future University Hakodate); Baba, Jun (CyberAgent, Inc); Nakanishi, Junya (Osaka Univ)	

TuDT5 Track T5 (Miami, 2F)

Motion Planning and Navigation in Human-Centered Environments II (Regular Session)

Chair: Kim, Soonkyum — Korea Institute of Science and Technology

14:40-14:50 TuDT5.1

Holistic Deep-Reinforcement-Learning-Based Training for Autonomous Navigation in Crowded Environments

Kästner, Linh (T-Mobile, TU Berlin); Meusel, Marvin (Technische Universität Berlin); Bhuiyan, Teham (TU Berlin); Lambrecht, Jens (Technische Universität Berlin)

14:50-15:00 TuDT5.2

S&Reg: End-To-End Learning-Based Model for Multi-Goal Path Planning Problem

Huang, Yuan (Waseda University); Gu, Kairui (Waseda University); Lee, Hee-hyol (Waseda University)

15:00-15:10 TuDT5.3

VAFOR: Proactive Voice Assistant for Object Retrieval in the Physical World

Satyev, Bekatan (Independent); Ahn, Hyemin (Ulsan National Institute of Science and Technology)

15:10-15:20 TuDT5.4

Real-Life Experiment Metrics for Evaluating Human-Robot Collaborative Navigation Tasks

Repiso, Ely (LAAS-CNRS, Toulouse); Garrell, Anais (UPC-CSIC); Sanfeliu, Alberto (Universitat Politècnica De Cataluyna)

TuDT6 Track T6 (Venice, 2F)

Novel Interfaces and Interaction Modalities IV (Regular Session)

Chair: Lee, Jaeryoung — Chubu University

14:40-14:50 TuDT6.1

RobotScale: A Framework for Adaptable Estimation of Static and Dynamic Object Properties with Object-Dependent Sensitivity Tuning

Pavlic, Marko (Technical University of Munich); Markert, Timo (Resense GmbH); Matich, Sebastian (WITTENSTEIN SE); Burschka, Darius (Technische Universitaet Muenchen)

14:50-15:00 TuDT6.2

Physical Embodiment versus Novelty – Which Influences Interactions with Embodied Conversational Agents More?

Galiza Cerdeira Gonzalez, Antonio (Tokyo University of Agriculture and Technology); Mizuuchi, Ikuo (Tokyo University of Agriculture and Technology)

TuPO Track T2 (Grand Ballroom, 2F)

Late Breaking Report (Poster Session)

Chair: Hwang, Minho — Daegu Gyeongbuk Instituute of Science and Technology (DGIST)

15:30-16:30 TuPO.1

Teaching Industrial Robots Using a VR-Based Learning Environment: A Qualitative Study

Arntz, Alexander (University of Applied Sciences Ruhr West); Straßmann, Carolin (University of Applied Sciences Ruhr West); Eimler, Sabrina C. (Hochschule Ruhr West, University of Applied Sciences)

15:30-16:30 TuPO.2

Robotic Assistance for Extended Sensing, Locomotion and Manipulation by Gaze Control

Huang, Shouren (University of Tokyo); Sørensen, Sune Lundø (University of Southern Denmark); Cao, Yongpeng (The University of Tokyo); Ishikawa, Masatoshi (University of Tokyo); Mikkel, Kjærgaard (University of Southern Denmark); Yamakawa, Yuji (The University of Tokyo)

15:30-16:30 TuPO.3

Dementia Prevention Using Flowerpot-Type "Famileaf" Robot

Gouko, Manabu (Tohoku Gakuin University); Ishizumi, Nagisa (Techno Mind Corporation)

15:30-16:30 TuPO.4

A Study on the High Aspect Ratio Grasp Manipulator with Spiral Zipper Mechanism

Choi, Myeongjin (Hanyang University); Park, Inha (Hanyang University); Bae, Jangho (University of Pennsylvania); Yim, Mark (University of Pennsylvania); Seo, TaeWon (Hanyang University)

15:30-16:30 TuPO.5

A Study on the Locomotion Planning Method of VTT Platform on Uneven Surfaces

Park, Inha (Hanyang University); Bae, Jangho (University of Pennsylvania); Yim, Mark (University of Pennsylvania); Seo, TaeWon (Hanyang University)

15:30-16:30 TuPO.6

Deep Learning Based Real-Time Korean Sign Language Translation Algorithm

Lim, Wansu (Kumoh National Institute of Technology); Jeong-in, Kim (Kumoh National Institute of Technology); Jihwan, Park (Kumoh National Institute of Technology)

15:30-16:30 TuPO.7

Understanding Privacy Concerns with Delivery Robots in Office Environments

Grasso, Maria Antonietta (Naver Labs Europe); Park, Jisun (Naver Labs Europe); Willamowski, Jutta (Naver Labs Europe)

15:30-16:30 TuPO.8

Towards Inclusive Human-Robot Interaction: Designing for Diversity and Accessibility

LAW, Wing Ting (Hong Kong Productivity Council); Fan, Kam Wah (Hong Kong Productivity Council); LO, kwok wai (Hong Kong Productivity Council); Chan, Hing Yi (Hong Kong Productivity Council); LI, Ki Sing (Hong Kong Productivity Council); Mo, Tiande (Hong Kong Productivity Council)

15:30-16:30 TuPO.9

Humans Helping Robots: The Role of Knowledge, Attitudes, and Context of Use

Potinteu, Andreea Elena (University of Tübingen, Leibniz Institute for Knowledge Media); Said, Nadia (University of Tübingen); Jahn, Georg (Chemnitz University of Technology); Huff, Markus (Leibniz-Institut Für Wissensmedien)

15:30-16:30 TuPO.10

Robots vs. AI - How Attitudes, Familiarity, Anthropomorphism, Knowledge, and Risk-Opportunity Perception Influence Users' Preference for Robots and Artificial Intelligence

Said, Nadia (University of Tübingen); Wagner, Julia (Reutlingen University); Potinteu, Andreea Elena (University of Tübingen, Leibniz Institute for Knowledge Media)

15:30-16:30 TuPO.11

Aromanoidics: Towards a Framework of Robotic Scents

Hidaka, Shun (Tokyo Institute of Technology); Kobuki, Sota (Tokyo Institute of Technology); Seaborn, Katie (Tokyo Institute of Technology); Venture, Gentiane (The University of Tokyo)

15:30-16:30 TuPO.12

Integration of the Child-Robot Interaction Model to Improve Interplay through Emotional Interaction and Communication

RYBAKOVA, ANASTASIYA (Korea Institute of Science and Technology); Choi, Jongsuk (Korea Inst. of Sci. and Tech)

15:30-16:30 TuPO.14

Comparison of Energy Consumption Rate and Walking Ability According to Exoskeleton Robot Type after Robot-Assisted Over-Ground Walking Training in Motor Complete Spinal Cord Injury

Cho, Duk Youn (National Rehabilitation Research Center); LIM, JUNG EUN (National Rehabilitation Center); Yang, SungPhil (National Rehabilitation Center); LEE, Jun Min (Korea National Rehabilitation Center); SHIN, BEONGJU (National Rehabilitation Center); KIM, ONYOO (National Rehabilitation Center)

15:30-16:30 TuPO.15

Design of a Self-Cleanable Electroadhesive Carrier for Stable Conveying System

Lim, Sein (Korea Advanced Institute of Science & Technology (KAIST)); Kim, Jihoon (KAIST); Hwang, Geonwoo (Korea Advanced Institute of Science and Technology); Kyung, Ki-Uk (Korea Advanced Institute of Science & Technology (KAIST))

15:30-16:30 TuPO.16

Low-Cost and Light-Weight Assistive Suit for Caregivers' Transfer Work and an Evaluation of Compensation of the Load to the Spine's L5/S1 Segment

Sakaki, Taisuke (Kyushu Sangyo University); ushimi, nobuhiro (Kyushu Sangyo University); Shimokawa, Toshihiko (Kyushu Sangyo University)

15:30-16:30 TuPO.17

Design of Novel Prosthetic Wrist Using Shape Memory Alloy Actuators and Rolling Contact Joint with sEMG Control

Chung, Chongyoung (Korea Advanced Institute of Science and Technology (KAIST)); Hyeon, Kyujin (KAIST); Ma, Jihyeong (Korea Advanced Institute of Science and Technology); Kyung, Ki-Uk (Korea Advanced Institute of Science & Technology (KAIST))

15:30-16:30 TuPO.18

Evaluation of a Social Robot at the Reception Desk for Exam Registration During Covid-19

Steinhaeusser, Sophia C. (University of Wuerzburg); Donnermann, Melissa (Julius-Maximilians University Wuerzburg); Lein, Martina (Julius-Maximilians-Universität of Würzburg); Lugrin, Birgit (University of Wuerzburg)

15:30-16:30 TuPO.19

A Data-Driven Approach to Positioning Grab Bars in the Sagittal Plane for Elderly Persons

Bolli, Roberto (MIT); Asada, Harry (MIT)

15:30-16:30 TuPO.20

Detecting of Shear Direction with Piezoelectric Sensors in Cylinder Structure

Min, Jiyong (Korea University); Kim, Hojoon (KIST (Center for Intelligent and Interactive Robotics, KoreaInst); Lee, Min Hyeok (Korea University); Cha, Youngsu (Korea University)

15:30-16:30 TuPO.21

Emotional Changes in Children with Developmental Disabilities in Clinical Experiments Using SAR Robots

Lee, Jaeryoung (Chubu University); Stefanov, Dimitar (Middlesex University)

15:30-16:30 TuPO.22

Tangible-E-M-Otion: Interactive Cloth That Calms People Down

Lee, Jaeryoung (Chubu University); Kim, SunKyoung (University of Tsukuba); Jeon, Eunjeong (Independent Researcher)

15:30-16:30 TuPO.23

Developing Social Robots with Empathetic Non-Verbal Cues Using Large Language Models

Lee, Yoon Kyung (Seoul National University); Jung, Yoonwon (Seoul National University); Kang, Gyuyi (Seoul National University); Hahn, Sowon (Seoul National University)

15:30-16:30 TuPO.24

Effect of Factual and Empathetic Feedback Styles in Robotic Fitness Coaching on Exercise Behavior Change

Lee, Yoon Kyung (Seoul National University); Park, Yong-Ha (Seoul National University); Shin, Minjung (Seoul National University); Hahn, Sowon (Seoul National University)

15:30-16:30 TuPO.25

The Influence of Perceived Animacy on Human Perception of Robot Errors

Miao, Xin (Tsinghua University); Zhang, Xiaohan (Beijing Zhipu Huazhang Technology Co., Ltd); Tang, Jie (Tsinghua University); Peng, Kaiping (Tsinghua University); Wang, Fei (Tsinghua University)

15:30-16:30 TuPO.26

Designing Adaptive Navigation Sound for Indoor Delivery Robots

Mouton, Baptiste (Naver Labs Europe); Abe, Naoko (Naver Labs Europe); Gallo, Danilo (Naver Labs Europe); Colombino, Tommaso (Naver Labs Europe); Lee, Dagyeong (Naver Labs)

15:30-16:30 TuPO.27

"Take a Smallish Nap!": Inducing Relaxation Using a Tapping Robot

Furusawa, Minori (University of Tsukuba); Osawa, Hirotaka (Keio University)

15:30-16:30 TuPO.28

A Hybrid Haptic Simulator for Realistic Car Door Interactions: Design and Implementation

Kim, Ji-Sung (KAIST); Ma, Jihyeong (Korea Advanced Institute of Science and Technology); Kyung, Ki-Uk (Korea Advanced Institute of Science & Technology (KAIST))

15:30-16:30 TuPO.29

Confluences and Conflicts in Stakeholder Imaginaries of 'Robots for Care'

de Saille, Stevienna (University of Sheffield); Cameron, David (University of Sheffield); Labinjo, Temitope (University of Sheffield)

15:30-16:30 TuPO.30

FurNav: Development and Preliminary Study of a Robot Direction Giver

Wilson, Bruce W (Heriot-Watt University); Schlosser, Yann (Heriot-Watt University); Tarkany, Rayane (Heriot-Watt University); Moujahid, Meriam (Heriot-Watt University); Nesset, Birthe (Heriot-Watt University); Dinkar, Tanvi (Heriot-Watt University); Rieser, Verena (Heriot-Watt University)

15:30-16:30 TuPO.31

Discriminating between Autonomous and Human Remote Control in Human-Robot Interaction: The Role of Sensorimotor Adaptation

Ciardo, Francesca (Istituto Italiano Di Tecnologia); Radice, Marta (University of Milano-Bicocca); Russi, Nicola Severino (IIT); De Tommaso, Davide (Istituto Italiano Di Tecnologia); Wykowska, Agnieszka (Istituto Italiano Di Tecnologia)

15:30-16:30 TuPO.32

Scale and Motion Adaptive Multi-Object Tracking Algorithm for Unmanned Aerial Vehicles

SONG, INPYO (Sungkyunkwan University); Lee, Jangwon (Sungkyunkwan University)

15:30-16:30 TuPO.33

Evaluation of Operator Performance and Workload in Robotic Teleoperation Assembly Task

Prinz, Theresa (Technical University of Munich, TUM School of Engineering and De); Wagner, Marlene (Technical University Munich); Bengler, Klaus (Technical University of Munich)

15:30-16:30 TuPO.34

AI-Based Interactive Telemedical Query System for Medical Inquiries

Burum, Krystian (George Washington University); Lee, Myungeun (George Washington University); Teoh, Jia Yuan (George Washington University); Park, Chung Hyuk (George Washington University)

15:30-16:30 TuPO.35

Design of a Miniature Ultrasound Transducer Using PMN-PT Single Crystal for Side-Lobe Elimination in Mid-Air Haptic Feedback

Han, Jaeseung (KAIST); Park, Jihwan (KAIST); Kyung, Ki-Uk (Korea Advanced Institute of Science & Technology (KAIST))

15:30-16:30 TuPO.36

Embracing Digital (Self-)Care: Early Insights from a Field Test of a Social Robot-Assisted Health Monitoring System for Older Adults

Neef, Caterina (TH Köln - University of Applied Sciences); Linden, Katharina Friederike (TH Köln - University of Applied Sciences); Richert, Anja (University of Applied Sciences Cologne)

15:30-16:30 TuPO.37

Anthropomorphic Knee with Human-Mimetic Ligament Constraint Aiming Human-Like Motions

Yamamoto, Yudai (Tokyo University of Agriculture and Technology); Mizuuchi, Ikuo (Tokyo University of Agriculture and Technology)

15:30-16:30 TuPO.38

The Delicate Dance of Unintended Offense: Robots As Agents of Social Repair for Microaggressions

Kim, Boyoung (George Mason University Korea); Winkle, Katie (Uppsala University); Korman, Joanna (The MITRE Corporation)

15:30-16:30 TuPO.39

Real-Time Personality Prediction System Using Multi-Modal Sensor in Human-Robot Interactions

Bhin, Hyeonuk (Korea Institute of Science and Technology); Lim, Yoonseob (Korea Institute of Science and Technology); Choi, Jongsuk (Korea Inst. of Sci. and Tech.)

15:30-16:30 TuPO.40

Actuation Optimization of Hyper-Vacuum Artificial Muscles

Coutinho, Altair (Sungkyunkwan University); Rodrigue, Hugo (Sungkyunkwan University)

15:30-16:30 TuPO.41

Impression Evaluation of Rewarding/Punitive Behavior Using Robotic Gestures and Gaze in the Older Adults

Uchikawa, Otono (Chuo University); Niitsuma, Mihoko (Chuo University)

15:30-16:30 TuPO.42

The Impact of 'Head' on Robotic Threat Perception in Rats

Jo, Kyeong Im (Korea University); Jeong, Ji Hoon (Korea University); Choi, June-Seek (Korea University)

15:30-16:30 TuPO.43

A Tunable Tensile Element for Variable Compliance of Tensegrity Robots

Arshad, Vaqas (Sungkyunkwan University); Jamil, Babar (Sungkyunkwan University); Rodrigue, Hugo (Sungkyunkwan University)

15:30-16:30 TuPO.44

What Predicts Interpersonal Affect? Preliminary Analyses from Retrospective Evaluations

Parreira, Maria Teresa (Cornell University); Sack, Michael (Cornell University); Jung, Malte (Cornell University)

15:30-16:30 TuPO.45

I'll Get by with a Little Help from AI – Initial Exploration of New Perspectives for Non-Engineer Scholars with ChatGPT

Müller, Ana (University of Applied Sciences Cologne); Richert, Anja (University of Applied Sciences Cologne)

15:30-16:30 TuPO.46

GSIP: A GRU-Based System for Human Impression Prediction and Automatic Prosody Selection for Gibberish Speech

Galiza Cerdeira Gonzalez, Antonio (Tokyo University of Agriculture and Technology); Mizuuchi, Ikuo (Tokyo University of Agriculture and Technology)

15:30-16:30 TuPO.47

Intrinsic Force Sensing on Nonlinear Shape of Collaborative Robots

Jung, Dawoon (Ajou Unversity); Bu, Seongun (Ajou University); Kang, Yuna (Ajou University); Kim, Uikyum (Ajou University)

15:30-16:30 TuPO.48

Design of a Robotic Gripper for Fruits Harvesting with Fin Ray Mechanism

An, Byeongchan (Ajou University); Song, Minseok (Ajou University); Kim, Uikyum (Ajou University)

15:30-16:30 TuPO.49

Unsupervised Learning-Based Endoscopic Scene Homography Estimation and Image Stitching

Zhao, ShiZun (Fudan University); Luo, jingjing (Fudan University); Wang, Hongbo (Fudan University); Han, Yuan (Eye & ENT Hospital of Fudan University); WenXian, Li (Eye & ENT Hospital of Fudan University)

15:30-16:30 TuPO.50

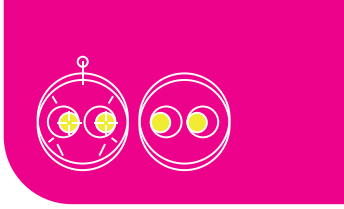
Taotie: Designing a Museum Robot Utilizing Cultural Metaphors

Yao, Zhihao (Tsinghua University); Guo, Yijie (Tsinghua University); Lu, Yao (Tsinghua University); Sun, Qirui (Tsinghua University); Gao, Mingyue (Tsinghua University); Mi, Haipeng (Tsinghua University)

15:30-16:30 TuPO.51

The Imitation Game: A Dance Task to Explore Social Influence in Child-Robot Mixed Groups

Pusceddu, Giulia (Istituto Italiano Di Tecnologia, Università Di Genova); Cocchella, Francesca (Italian Institute of Technology/University of Genoa); Belgiovine, Giulia (Istituto Italiano Di Tecnologia); Lastrico, Linda (Italian Institute of Technology); Bogliolo, Michela (Scuola Di Robotica); Rea, Francesco (Istituto Italiano Di Tecnologia); Casadio, Maura (University of Genoa); Sciutti, Alessandra (Italian Institute of Technology)



TuEET1 Track T1 (Sicily, 1F)

Social Human-Robot Interaction of Human-Care Service Robots (Special Session)

Chair: Jang, Minsu — Electronics & Telecommunications Research Institute

Co-Chair: Ahn, Ho Seok — The University of Auckland, Auckland

16:40-16:50 TuET1.1

Can a Robot Elicit Emotions? a Global Optimization Model to Attribute Mental States to Human Users in HRI

Staffa, Mariacarla (University of Naples Parthenope); D'Errico, Lorenzo (University of Naples Federico II)

16:50-17:00 TuET1.2

Evaluation of Large Tweet Dataset for Emotion Detection Model: A Comparative Study between Various ML and Transformer

Lee, Sanghyub John (University of Auckland); Lim, JongYoon (University of Auckland); Paas, Leo (The University of Auckland); Ahn, Ho Seok (The University of Auckland, Auckland)

17:00-17:10 TuET1.3

The Video Game to Robot Driver Pipeline: Sociability with Humans-In-The-Loop

Knight, Heather (Oregon State University); Buchmeier, Sean (Oregon State University)

17:10-17:20 TuET1.4

The Effects of Socio-Relational Context and Robotization on Human Group

Kang, Dahyun (Korea Institute of Science and Technology); Kim, Sangmin (Korea Institute of Science and Technology); Choi, Jongsuk (Korea Inst. of Sci. and Tech); Kwak, Sonya Sona (Korea Institute of Science and Technology (KIST))

17:20-17:30 TuET1.5

Abnormal Detection of Worker by Interaction Analysis of Accident-Causing Objects

Kim, Won Shik (UST); Kim, Kyekyung (Electronics and Telecommunications Research Institute)

17:30-17:40 TuET1.6

To Shake or Not to Shake: Intuitive Reactions of Senior Adults to a Robot Handshake in a Western Culture

van Otterdijk, Maria Theodorus Henricus (University of Oslo); Saplacan, Diana (University of Oslo); Baselizadeh, Adel (University of Oslo (UiO)); Laeng, Bruno (Department of Psychology and with the RITMO Centre for Interdisc); Torresen, Jim (University of Oslo)

17:40-17:50 TuET1.7

Development and Validation of a Motion Dictionary to Create Emotional Gestures for the NAO Robot

Hellou, Mehdi (University of Manchester); Gasteiger, Norina (University of Manchester); Kweon, Andy (The University of Auckland); Lim, JongYoon (University of Auckland); MacDonald, Bruce (University of Auckland); Cangelosi, Angelo (University of Manchester); Ahn, Ho Seok (The University of Auckland, Auckland)

17:50-18:00 TuET1.8

Connecting without Reaching: How Voice-Cloned Robot Can Enhance Mental Health of Isolated People During a Pandemic

Kim, Jun San (KB Financial Group); Shin, Soyeon (LG Electronics); Kang, Dahyun (Korea Institute of Science and Technology); Lim, Yoonseob (Korea Institute of Science and Technology); Kwak, Sonya Sona (Korea Institute of Science and Technology (KIST))

18:00-18:10 TuET1.9

Deep Learning-Based Head Pose Estimation for Enhancing Nonverbal Communication in Human-Robot Interaction

Yoon, Chanyoung (Korea Institute of Industrial Technology); Lim, Yoongu (Korea Institute of Industrial Technology); Lee, Dong-Wook (Korea Institute of Industrial Technology); Ko, KwangEun (Korea Institute of Industrial Technology)

TuET3 Track T3 (Capri, 2F)

Mental Models of the Human User in Social HRI (Regular Session)

Chair: Trafton, Greg — Naval Research Laboratory

16:40-16:50 TuET3.1

Towards Benchmarking Human-Aware Robot Navigation: A New Perspective and Metrics

Singamaneni, Phani Teja (LAAS-CNRS); Favier, Anthony (LAAS-CNRS); Alami, Rachid (CNRS)

16:50-17:00 TuET3.2

Investigating NARS: Inconsistent Practice of Application and Reporting

Rosén, Julia (University of Skövde); Lagerstedt, Erik (University of Skövde); Lamb, Maurice (Högskolan I Skövde)

17:00-17:10 TuET3.3

Does It Affect You? Social and Learning Implications of Using Cognitive-Affective State Recognition for Proactive Human-Robot Tutoring

Kraus, Matthias (University of Augsburg); Betancourt, Diana Lucia (Ulm University); Minker, Wolfgang (Ulm University)

17:10-17:20 TuET3.4

The Perception of Agency: Scale Reduction and Construct Validity

Trafton, Greg (Naval Research Laboratory); Frazier, Chelsea (West Point); Zish, Kevin (Global Systems Technology); Bio, Branden (National Research Council); MCCURRY, J. MALCOLM (Peraton)

17:20-17:30 TuET3.5

Assessing a Virtual Platform's Effectiveness in Exploring Mental Models of Robot Design

Haring, Kerstin Sophie (University of Denver); Pittman, Daniel (University of Denver); Train, Nicole (Metropolitan State University); Dossett, Benjamin (University of Denver); Laity, Weston (University of Denver); Toczek, Maisey (University of Denver); Sinclair, Jordan (University of Denver); Mamo, Robel (University of Denver)

17:30-17:40 TuET3.6

Human or AI? the Brain Knows It! a Brain-Based Turing Test to Discriminate between Human and Artificial Agents

Pischedda, Doris (University of Pavia); Kaufmann, Vanessa (Universität Potsdam); Wudarczyk, Olga (Department of Psychology, Humboldt-Universität Zu Berlin, Berlin); Abdel Rahman, Rasha (Department of Psychology, Humboldt-Universität Zu Berlin, Berlin); Hafner, Verena Vanessa (Humboldt-Universität Zu Berlin); Kuhlen, Anna (Department of Psychology, Humboldt-Universität Zu Berlin, Berlin); Haynes, John-Dylan (Charité Universitätsmedizin)

17:40-17:50 TuET3.7

Assessing Perceived Discomfort and Proxemic Behavior towards Robots: A Comparative Study between Real and Augmented Reality Presentations

Herzog, Olivia (Technical University of Munich); Nertinger, Simone (Technical University of Munich); Wenzel, Katharina Valeska (Technical University of Munich); Naceri, Abdeldjallil (Technical University of Munich); Haddadin, Sami (Technical University of Munich); Bengler, Klaus (Technical University of Munich)

17:50-18:00 TuET3.8

Evaluating the Effectiveness of Iconography for Representing Robot Mental States in the Build-A-Bot Platform

Haring, Kerstin Sophie (University of Denver); Pittman, Daniel (University of Denver); Train, Nicole (Metropolitan State University); Dossett, Benjamin (University of Denver); Laity, Weston (University of Denver); Toczek, Maisey (University of Denver); Sinclair, Jordan (University of Denver); Mamo, Robel (University of Denver)

18:00-18:10 TuET3.9

Participatory Design of a Social Robot and Robot-Mediated Storytelling Activity to Raise Awareness of Gender Inequality among Children

Maure, Romain (Karlsruhe Institute of Technology); Bruno, Barbara (Karlsruhe Institute of Technology (KIT))

TuET4 Track T4 (Sydney, 2F)

Applications of Social Robots III (Regular Session)

Chair: Liu, Baisong — Eindhoven University of Technology

16:40-16:50 TuET4.1

Human Security Robot Interaction and Anthropomorphism: An Examination of Pepper, RAMSEE, and Knightscope Robots

Ye, Xin (University of Michigan); Robert, Lionel (University of Michigan)

16:50-17:00 TuET4.2

Human-Robot Co-Creativity: A Scoping Review - Informing a Research Agenda for Human-Robot Co-Creativity with Older Adults

Bossema, Marianne (University of Applied Sciences Amsterdam); Ben Allouch, Somaya (Amsterdam University); Plaat, Aske (Leiden University); Saunders, Rob (Leiden University)

17:00-17:10 TuET4.3

What Do People Think of Social Robots and Voice Agents As Public Speaking Coaches?

Forghani, Delara (University of Waterloo); Ghafurian, Moojan (University of Waterloo); Rasouli, Samira (Department of Electrical and Computer Engineering, University of Waterloo); Nehaniv, Chrystopher (University of Waterloo); Dautenhahn, Kerstin (University of Waterloo)

17:10-17:20 TuET4.4

3 Key Challenges in Designing Advanced Social Robotic Applications

Liu, Baisong (Eindhoven University of Technology); Tetteroo, Daniel (Eindhoven University of Technology); Markopoulos, Panos (Eindhoven University of Technology)

17:20-17:30 TuET4.5

PePUT: A Unity Toolkit for the Social Robot Pepper

Ganal, Elisabeth (University of Würzburg); Siol, Lenny (Julius Maximilians Universität Würzburg); Lugrin, Birgit (University of Wuerzburg)

17:30-17:40 TuET4.6

Dreaming up Smart Home Futures: A Story Completion Study

Reig, Samantha (Carnegie Mellon University); Carter, Elizabeth (Carnegie Mellon University); Kirabo, Lynn (Carnegie Mellon University); Fong, Terrence (NASA Ames Research Center (ARC)); Steinfeld, Aaron (Carnegie Mellon University); Forlizzi, Jodi (Carnegie Mellon University)

17:40-17:50 TuET4.7

We All Make Mistakes: Terminal, Non-Critical, Recoverable, and Favorable Interaction Failures between People and a Social Robot

Kamino, Waki (Indiana University Bloomington); Randall, Natasha (Indiana University); Saga, Tanya (University of Tsukuba); Hsu, Long-Jing (Indiana University Bloomington); Tsui, Katherine (Toyota Research Institute); Sabanovic, Selma (Indiana University Bloomington); Nagata, Shinichi (University of Tsukuba)

17:50-18:00 TuET4.8

Realizing a Life Well Lived: The Design of a Home Robot to Assist Older Adults with Self-Reflection and Intentional Living

Randall, Natasha (Indiana University); Saga, Tanya (University of Tsukuba); Kamino, Waki (Indiana University Bloomington); Tsui, Kate (Toyota Research Institute); Sabanovic, Selma (Indiana University Bloomington); Nagata, Shinichi (University of Tsukuba)

18:00-18:10 TuET4.9

High-Speed, High-Quality Robotic Portrait Drawing System

Nasrat, Shady (Pusan National University, Busan, SouthKorea); Kang, Taewoong (Pusan National University); Jinwoo, Park (Pusan National University, Busan, SouthKorea); Kim, Joonyoung (Pusan National University); Yi, Seung-Joon (Pusan National University)

TuET5 Track T5 (Miami, 2F)

Motion Planning and Navigation in Human-Centered Environments III (Regular Session)

Chair: Nam, Changjoo — Sogang University

16:40-16:50 TuET5.1

Optimal Robot Path Planning in a Collaborative Human-Robot Team with Intermittent Human Availability

Dahiya, Abhinav (University of Waterloo); Smith, Stephen L. (University of Waterloo)

16:50-17:00 TuET5.2

Human-Multi-Robot Task Allocation in Agricultural Settings: A Mixed Integer Linear Programming Approach

Lippi, Martina (University of Roma Tre); Gallou, Jorand (Roma Tre University); Palmieri, Jozsef (University of Cassino and Southern Lazio); Gasparri, Andrea (Università Degli Studi Roma Tre); Marino, Alessandro (University of Cassino and Southern Lazio)

17:00-17:10 TuET5.3

Multi-Floor Danger and Responsiveness Assessment with Autonomous Legged Robots in Catastrophic Scenarios

Betta, Zoe (University of Genova); Paneri, Serena (University of Genova); Gaudino, Alessandro (University of Perugia); Benini, Alessandro (ANPAS); Recchiuto, Carmine Tommaso (University of Genova); Sgorbissa, Antonio (University of Genova)

17:10-17:20 TuET5.4

ISS/JEM Crew-Task Analysis to Support Astronauts with Intra-Vehicular Robotics

Yamaguchi, Seiko Piotr (Japan Aerospace Exploration Agency (JAXA)); Itakura, Riichi (Japan Aerospace Exploration Agency (JAXA)); Inagaki, Tetsuya (Japan Aerospace Exploration Agency (JAXA))

17:20-17:30 TuET5.5

Context Based Echo State Networks for Robot Movement Primitives

Amirshirzad, Negin (Ozyegin University); Asada, Minoru (Open and Transdisciplinary Research Initiatives, Osaka Universit); Oztop, Erhan (Osaka University / Ozyegin University)

17:30-17:40 TuET5.6

Low-Cost Simultaneous Localization and Mapping Using Occupancy Grid, Place Recognition and Semantic Priors

Kenye, Lhilo (Indian Institute of Information Technology Allahabad, India; Nav); Kala, Rahul (Indian Institute of Information Technology, Allahabad, India)

17:40-17:50 TuET5.7

Automating Real-World Benchmarking of Navigation Approaches in Crowded Environments Using Virtual Laser Scans

Kästner, Linh (T-Mobile, TU Berlin); Kmiecik, Jacek (Technical University Berlin); Khorsandi, Niloufar (Technical University Berlin); Lambrecht, Jens (Technische Universität Berlin)

17:50-18:00 TuET5.8

Costmap-Based Local Motion Planning Using Deep Reinforcement Learning

Garrote, Luís Carlos (Institute of Systems and Robotics, University of Coimbra); Perdiz, João (University of Coimbra); Nunes, Urbano J. (Instituto De Sistemas E Robotica)

18:00-18:10 TuET5.9

Situating Robots in the Organizational Dynamics of the Gas Energy Industry: A Collaborative Design Study

Lee, Hee Rin (Michigan State University); Tan, Xiaobo (Michigan State University); Zhang, Wenlong (Arizona State University); Deng, Yiming (Michigan State University); Liu, Yongming (Arizona State University)

TuET6 Track T6 (Venice, 2F)

Robot Perception for Interaction and Communication (Regular Session)

Chair: Shakeel, Muhammad — Honda Research Institute Japan Co., Ltd

16:40-16:50 TuET6.1

Controllable Motion Synthesis and Reconstruction with Autoregressive Diffusion Models

Yin, Wenjie (KTH); Tu, Ruibo (KTH Royal Institute of Technology); Yin, Hang (KTH); Kragic, Danica (KTH); Kjellstrom, Hedvig (KTH); Björkman, Mårten (KTH)

16:50-17:00 TuET6.2

Human-Centered Local Planning for Mobile Robots with 2D Laser Via Pedestrian Behavior Prediction

Hu, Wenfei (Peking University); fang, shuai (Peking University); Wang, Yi (Peking University); Luo, Dingsheng (Peking University)

17:00-17:10 TuET6.3

Action-Conditioned Deep Visual Prediction with RoAM, a New Indoor Human Motion Dataset for Autonomous Robots

Sarkar, Meenakshi (Indian Institute of Science); Honkote, Vinayak (Intel Corporation); Das, Dibyendu (Intel); Ghose, Debasish (Indian Institute of Science)

17:10-17:20 TuET6.4

Feel the Point Clouds: Traversability Prediction and Tactile Terrain Detection Information for an Improved Human-Robot Interaction

Edlinger, Raimund (University of Applied Sciences Upper Austria); Nuechter, Andreas (University of Würzburg)

17:20-17:30 TuET6.5

S2Net: Accurate Panorama Depth Estimation on Spherical Surface

Li, Meng (Alibaba Group); Wang, Senbo (Alibaba Group); Yuan, Weihao (Hong Kong University of Science and Technology); Shen, Weichao (Alibaba Group); Sheng, Zhe (Alibaba Group); Dong, Zilong (Alibaba Group)

17:30-17:40 TuET6.6

Signs of Language: Embodied Sign Language Fingerspelling Acquisition from Demonstrations for Human-Robot Interaction

Tavella, Federico (The University of Manchester); Galata, Aphrodite (University of Manchester); Cangelosi, Angelo (University of Manchester)

17:40-17:50 TuET6.7

Learning Clear Class Separation for Open-Set 3D Detector in Autonomous Vehicle Via Selective Forgetting

Hu, Wenfei (Peking University); Lin, Weikai (Peking University); Fang, Hongyu (Peking University, Beijing, China); Wang, Yi (Peking University); Luo, Dingsheng (Peking University)

17:50-18:00 TuET6.8

A Behavioural Transformer for Effective Collaboration between a Robot and a Non-Stationary Human

Mon-Williams, Ruaridh (The University of Edinburgh); Stouraitis, Theodoros (Honda Research Institute, University of Edinburgh and RoboPhren); Vijayakumar, Sethu (University of Edinburgh)

18:00-18:10 TuET6.9

Recognizing Football Game Events: Handball Based on Computer Vision

Hassan, Mohammad Mehedi (Tokushima University); Karungaru, Stephen (University of Tokushima); Terada, Kenji (Tokusihma University)

Technical Program for Wednesday August 30, 2023

WeAT1	Track T1 (Sicily, 1F)
Human-Mediated Robot Autonomy (Special Session)	
Chair: Beraldo, Gloria	National Research Council of Italy
Co-Chair: Umbrico, Alessandro	National Research Council of Italy

10:20-10:30 WeAT1.1

Human-Aware Goal-Oriented Autonomy through ROS-Integrated Timeline-Based Planning and Execution

Umbrico, Alessandro (National Research Council of Italy); Cesta, Amedeo (CNR -- National Research Council of Italy, ISTC); Orlandini, Andrea (National Research Council of Italy)

10:30-10:40 WeAT1.2

Qualitative Prediction of Multi-Agent Spatial Interactions

Mghames, Sariah (University of Lincoln); Castri, Luca (University of Lincoln); Hanheide, Marc (University of Lincoln); Bellotto, Nicola (University of Padua)

10:40-10:50 WeAT1.3

RICO-MR: An Open-Source Architecture for Robot Intent Communication through Mixed Reality

Macciò, Simone (University of Genoa); MOHAMAD, SHAABAN (University of Genova); Carfì, Alessandro (University of Genoa); Zaccaria, Renato (University of Genova); Mastrogiovanni, Fulvio (University of Genoa)

10:50-11:00 WeAT1.4

Learning User-Preferred Robot Navigation Based on Social Force Model from Human Feedback in Virtual Reality Environments

Nakaoka, Shintaro (Keio University); Kawasaki, Yosuke (Keio University); Takahashi, Masaki (Keio University)

11:00-11:10 WeAT1.5

Automatic Interaction and Activity Recognition from Videos of Human Manual Demonstrations with Application to Anomaly Detection

Merlo, Elena (Italian Institute of Technology); Lagomarsino, Marta (Istituto Italiano Di Tecnologia); Lamon, Edoardo (Università Di Trento); Ajoudani, Arash (Istituto Italiano Di Tecnologia)

11:10-11:20 WeAT1.6

Rush-Out Risk Mapping from Human Operational Commands Considering Field Context

Ohnishi, Fumiya (Keio University); Kawasaki, Yosuke (Keio University); Takahashi, Masaki (Keio University)

WeAT3	Track T3 (Capri, 2F)
Child-Robot Interaction I (Regular Session)	
Chair: Kozima, Hideki	Tohoku University
10:20-10:30	WeAT3.1
Child's Personality and Self-Disclosures to a Robot Persona "In-The-Wild"	
Neerincx, Anouk (Utrecht University); Li, Yanzhe (Technical University of Delft); van de Sande, Kelvin (Utrecht University); Broz, Frank (TU Delft); Neerincx, Mark (TNO); de Graaf, Maartje (Utrecht University)	
10:30-10:40	WeAT3.2
Socially Assistive Robotics Optimizing Augmented Reality Educational Application for Teaching Traffic Safety in Kindergarten	
Karakosta, Anna (School of Educational & Social Policies, University of Macedonia); Velentza, Anna Maria (University of Macedonia); Pasalidou, Christina (University of Macedonia); Fachantidis, Nikolaos (University of Macedonia)	
10:40-10:50	WeAT3.3
Communication As Joint Prediction: A Case Study of Robot-Mediated Pretend Play with Children at a Kindergarten	
Kozima, Hideki (Tohoku University)	
10:50-11:00	WeAT3.4
Rapport Formation between Children and a Social Robot through the Identity of a Social Robot	
Chung, Jae Hee (Hongik University)	
11:00-11:10	WeAT3.5
QWriter System for Robot-Assisted Alphabet Acquisition	
Amirova, Aida (Nazarbayev University); Oralbayeva, Nurziya (Nazarbayev University); Telisheva, Zhansaule (Nazarbayev University); Zhanatkyzy, Aida (Nazarbayev University); Aidar, Shakerimov (Nazarbayev University); Sarmonov, Shamil (Nazarbayev University); Aimysheva, Arna (Nazarbayev University); Sandygulova, Anara (Nazarbayev University)	
11:10-11:20	WeAT3.6
A Feasibility Study of Using Kaspar, a Humanoid Robot for Speech and Language Therapy for Children with Learning Disabilities	
Lakatos, Gabriella (University of Hertfordshire); Sarda-Gou, Marina (University of Hertfordshire); Holthaus, Patrick (University of Hertfordshire); Wood, Luke Jai (University of Hertfordshire); Moros, Sílvia (University of Hertfordshire); Litchfield, Vicky (Woolgrove School Special Needs Academy); Robins, Ben (University of Hertfordshire); Amirabdollahian, Farshid (The University of Hertfordshire)	

WeAT4 Track T4 (Sydney, 2F)

Human Factors and Ergonomics I (Regular Session)

Chair: Cheng, Xiaoxiao — Imperial College of Science, Technology and Medicine, London UK

10:20-10:30 WeAT4.1

A Third Eye to Augment Environment Perception

Meara, Mark O (Imperial College of Science, Technology and Medicine); Cheng, Xiaoxiao (Imperial College London); Eden, Jonathan (University of Melborune); Ivanova, Ekaterina (Imperial College London); burdet, etienne (Imperial College London)

10:30-10:40 WeAT4.2

Why There Is No Definition of Trust: A Systems Approach with a Metamodel Representation

Schroepfer, Pete (Cnrs Irl 2958); Pradalier, Cedric (GeorgiaTech Lorraine)

10:40-10:50 WeAT4.3

Effect of Augmented Reality User Interface on Task Performance, Cognitive Load, and Situational Awareness in Human-Robot Collaboration

Kalatzis, Apostolos (Montana State University Bozeman); Girishan Prabhu, Vishnunarayan (The University of North Carolina at Charlotte); Stanley, Laura (Montana State University Bozeman); Wittie, Mike (Montana State University Bozeman)

10:50-11:00 WeAT4.4

Considering Human Factors in Risk Maps for Robust and Foresighted Driver Warning

Puphal, Tim (Honda Research Institute Europe GmbH); Hirano, Ryohei (Honda R&D Co., Ltd); Probst, Malte (Honda Research Institute Europe GmbH); Wenzel, Raphael (Honda Research Institute Europe GmbH); Kimata, Akihito (Honda R&D Co., Ltd)

11:00-11:10 WeAT4.5

Determining Movement Measures for Trust Assessment in Human-Robot Collaboration Using IMU-Based Motion Tracking

Hald, Kasper (Aalborg University); Rehm, Matthias (Aalborg University)

11:10-11:20 WeAT4.6

The Effects of Inaccurate Decision-Support Systems on Structured Shared Decision-Making for Human-Robot Teams

Kolb, Jack (Georgia Institute of Technology); Feigh, Karen (Georgia Institute of Technology); Srivastava, Divya (Georgia Institute of Technology)

WeAT5 Track T5 (Miami, 2F)

Social Intelligence for Robots I (Regular Session)

Chair: Malle, Bertram — Brown University

10:20-10:30 — WeAT5.1

Models and Algorithms for Human-Aware Task Planning with Integrated Theory of Mind

Favier, Anthony (LAAS-CNRS); Shekhar, Shashank (CNRS LAAS); Alami, Rachid (CNRS)

10:30-10:40 — WeAT5.2

The Impact of Social Norm Violations on Participants' Perception of and Trust in a Robot During a Competitive Game Scenario

Lawrence, Steven (University of Waterloo); Azizi, Negin (University of Waterloo); Fan, Kevin (University of Waterloo); Jouaiti, Melanie (Imperial College London); Hoey, Jesse (University of Waterloo); Nehaniv, Chrystopher (University of Waterloo); Dautenhahn, Kerstin (University of Waterloo)

10:40-10:50 — WeAT5.3

Development of the Pedestrian Awareness Model for Mobile Robots

Minami, Kota (Toyohashi University of Technology); Hayashi, Kotaro (Toyohashi University of Technology); Miura, Jun (Toyohashi University of Technology)

10:50-11:00 — WeAT5.4

Attempting to Aggregate Perceptual Constructs from Deep Neural Networks for Video and Audio Interaction Representation

Maheux, Marc-Antoine (Université De Sherbrooke); Auclair, Guillaume (Université De Sherbrooke); Warren, Philippe (Université De Sherbrooke); Létourneau, Dominic (Université De Sherbrooke); Michaud, Francois (Universite De Sherbrooke)

11:00-11:10 — WeAT5.5

Calibrated Human-Robot Teaching: What People Do When Teaching Norms to Robots

Chi, Vivienne Bihe (Brown University); Malle, Bertram (Brown University)

11:10-11:20 — WeAT5.6

How Can Dog Handlers Help Us Understand the Future of Wilderness Search & Rescue Robots?

Mott, Terran (Colorado School of Mines); Williams, Tom (Colorado School of Mines)

WeAT6 Track T6 (Venice, 2F)

Virtual Reality&Telepresence I (Regular Session)

Chair: Kim, KangGeon — Korea Institute of Science and Technology

10:20-10:30 WeAT6.1

Proxemic-Aware Augmented Reality for Human-Robot Interaction

Liu, Jingyang (Carnegie Mellon University); Hongyu, Mao (Carnegie Mellon University); Bard, Joshua (Carnegie Mellon University)

10:30-10:40 WeAT6.2

A Virtual Reality System for Predictive Display Functionality in a Telexistence-Controlled SEED-Noid Humanoid Robot with Evaluation of VR Sickness

Suda, Taiga (Hosei University); Yodowatari, Motoki (Hosei University, Graduate School of Science and Engineering); Kosaki, Sosuke (HoseiUniversity); Yokoyama, Koki (Hosei University); Yanagisawa, Eito (Hosei University); Oyama, Eimei (Toyama Prefectural University); Tokoi, Kohei (Wakayama University); Okada, Hiroyuki (Tamagawa University); Agah, Arvin (University of Kansas); Nakamura, Sousuke (Hosei University)

10:40-10:50 WeAT6.3

No Name, No Voice, Less Trust: Robot Group Identity Performance, Entitativity, and Trust Distribution

Bejarano, Alexandra (Colorado School of Mines); Williams, Tom (Colorado School of Mines)

10:50-11:00 WeAT6.4

Asura Hands: Own and Control Two Left Hands in Immersive Virtual Reality Environment

Kawaguchi, Asaki (Tokyo Metropolitan University); Abe, Yutaro (Tokyo Metropolitan University); Okamoto, Shogo (Tokyo Metropolitan University); Goto, Yuta (Tokyo Metropolitan University); Hara, Masayuki (Saitama University); Kanayama, Noriaki (National Institute of Advanced Industrial Science and Technology)

11:00-11:10 WeAT6.5

Empowering Cobots with Energy Models: Real Augmented Digital Twin Cobot with Accurate Energy Consumption Model

Heredia, Juan (University of Southern Denmark); Zieliński, Krzysztof (Poznan University of Technology); Schlette, Christian (University of Southern Denmark (SDU)); Mikkel, Kjærgaard (University of Southern Denmark)

11:10-11:20 WeAT6.6

Reinforcement Learning-Based Virtual Fixtures for Teleoperation of Hydraulic Construction Machine

Lee, Hyung Joo (RWTH Aachen University); Brell-Cokcan, Sigrid (RWTH Aachen University)

WeBT1	Track T1 (Sicily, 1F)
To Err Is Robotic: Understanding, Preventing, and Resolving Robots' Failures in HRI (Special Session)	
Chair: Rossi, Alessandra	University of Naples Federico II
Co-Chair: Koay, Kheng Lee	University of Hertfordshire
11:30-11:40	WeBT1.1
Sweet Robot O'Mine - How a Cheerful Robot Boosts Users' Performance in a Game Scenario	
Vigni, Francesco (Interdepartmental Center for Advances in Robotic Surgery - ICARO); Andriella, Antonio (Pal Robotics); Rossi, Silvia (Universita' Di Napoli Federico II)	
11:40-11:50	WeBT1.2
Evaluating People's Perception of Trust of a Deceptive Robot with Theory of Mind in an Assistive Gaming Scenario	
Rossi, Alessandra (University of Naples Federico II); Rossi, Silvia (Universita' Di Napoli Federico II)	
11:50-12:00	WeBT1.3
Machiavelli for Robots: Strategic Robot Failure, Deception, and Trust	
Sætra, Henrik Skaug (Østfold University College)	
12:00-12:10	WeBT1.4
Robot Broken Promise? Repair Strategies for Mitigating Loss of Trust for Repeated Failures	
Nesset, Birthe (Heriot-Watt University); Romeo, Marta (Heriot-Watt University); Rajendran, Gnanathusharan (Heriot-Watt University); Hastie, Helen (School of Mathematical and Computer Sciences, Heriot-Watt University)	
12:10-12:20	WeBT1.5
To Err Is Robotic; to Earn Trust, Divine: Comparing ChatGPT and Knowledge Graphs for HRI	
Wilcock, Graham (CDM Interact, Helsinki, Finland); Jokinen, Kristiina (AIRC, AIST, Japan and University of Helsinki, Finland)	
12:20-12:30	WeBT1.6
Trust Calibration through Intentional Errors: Designing Robot Errors to Decrease Children's Trust towards Robots	
Geiskkovitch, Denise Y. (McMaster University); Young, James Everett (University of Manitoba)	

WeBT3 Track T3 (Capri, 2F)

Child-Robot Interaction II (Regular Session)

Chair: Robins, Ben University of Hertfordshire

11:30-11:40 WeBT3.1

Kaspar Explains: The Effect of Causal Explanations on Visual Perspective Taking Skills in Children with Autism Spectrum Disorder

Sarda-Gou, Marina (University of Hertfordshire); Lakatos, Gabriella (University of Hertfordshire); Holthaus, Patrick (University of Hertfordshire); Robins, Ben (University of Hertfordshire); Moros, Sílvia (University of Hertfordshire); Wood, Luke Jai (University of Hertfordshire); Araujo, Hugo (King's College London); deGraft-Hanson, Christine Augusta Ekua (Garston Manor School); Mousavi, Mohammad Reza (King's College London); Amirabdollahian, Farshid (The University of Hertfordshire)

11:40-11:50 WeBT3.2

At School with a Robot: Italian Students' Perception of Robotics During an Educational Program

Cocchella, Francesca (Italian Institute of Technology/University of Genoa); Pusceddu, Giulia (Istituto Italiano Di Tecnologia, Università Di Genova); Belgiovine, Giulia (Istituto Italiano Di Tecnologia); Bogliolo, Michela (Scuola Di Robotica); Lastrico, Linda (Italian Institute of Technology); Casadio, Maura (University of Genoa); Rea, Francesco (Istituto Italiano Di Tecnologia); Sciutti, Alessandra (Italian Institute of Technology)

11:50-12:00 WeBT3.3

Embodied Technologies for Stress Management in Children: A Systematic Review

Li, Jing (Eindhoven University of Technology); Wang, Pinhao (Eindhoven University of Technology); Barakova, Emilia I. (Eindhoven University of Technology); Hu, Jun (Eindhoven University of Technology)

12:00-12:10 WeBT3.4

Living with Haru4Kids: Study on Children's Activity and Engagement in a Family-Robot Cohabitation Scenario

Garcia, Gonzalo A. (4i Intelligent Insights); Pérez, Guillermo (4i Intelligent Insights); Levinson, Leigh (Indiana University); Amores-Carredano, J. Gabriel (Universidad De Sevilla); Alvarez-Benito, Gloria (University of Seville); Castro-Malet, Manuel (4i Intelligent Insights); Castaño Ocaña, Mario (4i Intelligent Insights); López González de Quevedo, Marta Julia (4i Intelligent Insights); Durán-Viñuelas, Ricardo (4i Intelligent Insights); Gomez, Randy (Honda Research Institute Japan Co., Ltd); Sabanovic, Selma (Indiana University Bloomington)

12:10-12:20 WeBT3.5

Child-Robot Conversation in the Wild Wild Home: A Language Processing User Study

Pérez, Guillermo (4i Intelligent Insights); Garcia, Gonzalo A. (Freelance); Castro-Malet, Manuel (4i Intelligent Insights); Castaño Ocaña, Mario (4i Intelligent Insights); López González de Quevedo, Marta Julia (4i Intelligent Insights); Durán-Viñuelas, Ricardo (4i Intelligent Insights); Amores-Carredano, J. Gabriel (Universidad De Sevilla); Alvarez-Benito, Gloria (University of Seville); Levinson, Leigh (Indiana University); Sabanovic, Selma (Indiana University Bloomington); Gomez, Randy (Honda Research Institute Japan Co., Ltd)

12:20-12:30 WeBT3.6

Humanoid Robots for Wellbeing Assessment in Children: How Does Anxiety towards the Robot Affect Perceptions of Robot Role, Behaviour and Capabilities?

Abbasi, Nida Itrat (University of Cambridge); Spitale, Micol (University of Cambridge); Anderson, Joanna (University of Cambridge); Ford, Tamsin (University of Cambridge); Jones, Peter B. (University of Cambridge); Gunes, Hatice (University of Cambridge)

12:30-12:40 WeBT3.7

Age-Appropriate Robot Design: In-The-Wild Child-Robot Interaction Studies of Perseverance Styles and Robot's Unexpected Behavior

Wróbel, Alicja (Jagiellonian University); Źróbek, Karolina (Jagiellonian University); Schaper, Marie-Monique (Aarhus University); Zguda, Paulina (Jagiellonian University); Indurkhya, Bipin (Jagiellonian University)

12:40-12:50 WeBT3.8

Reading or iPad Gaming? Investigating Socially Interactive Robotic Bookshelf Proactively Engages Children in Reading Physical Books

Jiang, Zhuoqun (Singapore University of Technology and Design); Koh, Hong Pin (Singapore University of Technology & Design); Chew, Bryan Lijie (Singapore University of Technology and Design); Chen, Jiasen (Singapore University of Technology and Design); Yee, Andrew Zi Han (Singapore University of Technology and Design); Wang, Yixiao (Georgia Institute of Technology)

WeBT4 Track T4 (Sydney, 2F)

Human Factors and Ergonomics II (Regular Session)

Chair: Nomura, Tatsuya — Ryukoku University

11:30-11:40 — WeBT4.1

Robot Adaptation under Operator Cognitive Fatigue Using Reinforcement Learning

Shah, Jay (Texas A&M University); Yadav, Aakash (Texas A&M University); Hopko, Sarah (Texas A&M University); Mehta, Ranjana (Texas A&M University); Pagilla, Prabhakar Reddy (Texas A&M University)

11:40-11:50 — WeBT4.2

Immediate Effects of Short-Duration Wellbeing Practices on Children's Handwriting and Posture Guided by a Social Robot

Carnieto Tozadore, Daniel (École Polytechnique Fédérale De Lausanne (EPFL)); Cezayirlioğlu, Melike (EPFL); Wang, Chenyang (ETH Zurich); Bruno, Barbara (Karlsruhe Institute of Technology (KIT)); Dillenbourg, Pierre (EPFL)

11:50-12:00 — WeBT4.3

Critical Thinking Attitudes and Conservatism: Exploring the Impact on Negative Attitudes Toward Robots

Nomura, Tatsuya (Ryukoku University)

12:00-12:10 — WeBT4.4

Boundary Conditions for Human Gaze Estimation on a Social Robot Using State-Of-The-Art Models

Cheng, Linlin (Vrije Universiteit Amsterdam); Belopolsky, Artem (Vrije Universiteit Amsterdam); Hindriks, Koen (Vrije Universiteit Amsterdam)

12:10-12:20 — WeBT4.5

The Effect of Data Visualisation Quality and Task Density on Human-Swarm Interaction

Abioye, Ayodeji Opeyemi (University of Southampton); Naiseh, Mohammad (Bournemouth University); Hunt, William (University of Southampton); Clark, Jediah (University of Southampton); Ramchurn, Sarvapali (University of Southampton); Soorati, Mohammad Divband (University of Southampton)

12:20-12:30 — WeBT4.6

Enhanced No-Code Finger-Gesture-Based Robot Programming: Simultaneous Path and Contour Awareness for Orientation Estimation

Halim, Jayanto (Fraunhofer Institute for Machine Tools and Forming Technology); Eichler, Paul (Fraunhofer Institute for Machine Tools and Forming Technology IW); Krusche, Sebastian (Fraunhofer IWU); Bdiwi, Mohamad (Fraunhofer Institute for Machine Tools and Forming Technology IW); Ihlenfeldt, Steffen (TU Dresden)

12:30-12:40 — WeBT4.7

Study on the Impact of Situational Explanations and Prior Information Given to Users on Trust and Perceived Intelligence in Autonomous Driving in a Video-Based 2x2 Design

Kühnlenz, Kolja (Coburg University of Applied Sciences and Arts); Kühnlenz, Barbara (Coburg University of Applied Sciences and Arts)

12:40-12:50 — WeBT4.8

A Probabilistic Approach Based on Combination of Distance Metrics and Distribution Functions for Human Postures Classification

He, Xin (Graduate School of Information, Production and System, Waseda Un); Dutta, Vibekananda (Warsaw University of Technology); Zielinska, Teresa (Warsaw University of Technology); Matsumaru, Takafumi (Waseda University)

WeBT5	Track T5 (Miami, 2F)
Artificial Intelligence in HRI I (Regular Session)	
Chair: Kim, Wansoo	Hanyang University ERICA
11:30-11:40	WeBT5.1
Federated Continual Learning for Socially Aware Robotics	
Guerdan, Luke (Carnegie Mellon University); Gunes, Hatice (University of Cambridge)	
11:40-11:50	WeBT5.2
Multitask Learning for Multiple Recognition Tasks: A Framework for Lower-Limb Exoskeleton Robot Applications	
Kim, Joonhyun (Hanyang University); Ha, Seongmin (Hanyang University); Shin, Dongbin (Hexar Humancare); Ham, Seoyeon (Hanyang University); jang, jaepil (Hanyang University); Kim, Wansoo (Hanyang University ERICA)	
11:50-12:00	WeBT5.3
Probabilistic Policy Blending for Shared Autonomy Using Deep Reinforcement Learning	
Singh, Saurav (Rochester Institute of Technology); Heard, Jamison (Rochester Institute of Technology)	
12:00-12:10	WeBT5.4
A Novel Meta Control Framework for Robot Arm Reaching with Changeable Configuration	
Hu, Wenfei (Peking University); Yuan, Yifan (Peking University); Wang, Yi (Peking University); Luo, Dingsheng (Peking University)	
12:10-12:20	WeBT5.5
A Cognitive Robotics Model for Contextual Diversity in Language Learning	
Raggioli, Luca (University of Manchester); Cangelosi, Angelo (University of Manchester)	
12:20-12:30	WeBT5.6
Indoor Localization Using Vision and Language	
Pate, Seth (Northeastern University); Wong, Lawson L.S. (Northeastern University)	
12:30-12:40	WeBT5.7
Affective Computing for Human-Robot Interaction Research: Four Critical Lessons for the Hitchhiker	
Gunes, Hatice (University of Cambridge); Churamani, Nikhil (University of Cambridge)	

WeBT6 Track T6 (Venice, 2F)

Virtual Reality&Telepresence II (Regular Session)

Chair: Park, Jung-Min — Korea Institute of Science and Technology

11:30-11:40 WeBT6.1

Happily Error After: Framework Development and User Study for Correcting Robot Perception Errors in Virtual Reality

Wozniak, Maciej Kazimierz (KTH Royal Institute of Technology); Stower, Rebecca (KTH); Jensfelt, Patric (KTH - Royal Institute of Technology); Pereira, Andre (KTH Royal Institute of Technology)

11:40-11:50 WeBT6.2

Motor-Cognitive Effects of Virtual Reality Myoelectric Control Training

Issa, Mohamad (Technical University of Munich); Spiegeler Castaneda, Theophil (Technical University of Munich); Capsi Morales, Patricia (Technical University of Munich); Piazza, Cristina (Technical University Munich (TUM))

11:50-12:00 WeBT6.3

Creation and Testing of Synthetic Datasets for Training Road Scenes Algorithms

Khalzaa, Khulan (Tokushima University); Karungaru, Stephen (University of Tokushima); Terada, Kenji (Tokusihma University)

12:00-12:10 WeBT6.4

Exploring the Influence of Self-Avatar Similarity on Human-Robot Trust

Tang, Liang (University of Illinois at Urbana Champaign); Masooda, Bashir (University of Illinois at Urbana Champaign)

12:10-12:20 WeBT6.5

Immersive Virtual Reality Platform for Robot-Assisted Antenatal Ultrasound Scanning

A, Shyam (Indian Institute of Technology Madras); Purayath, Aparna (Healthcare Technology Innovation Centre); Selvakumar, Keerthivasan (Healthcare Technology Innovation Centre); S M, Akash (Healthcare Technology Innovation Centre); Govindaraju, Aswathaman (Indian Institute of Technology Madras); Lakshmanan, Manojkumar (Indian Institute of Technology Madras); Sivaprakasam, Mohanasankar (Indian Institute of Technology Madras)

12:20-12:30 WeBT6.6

Demand-Aware Multi-Robot Task Scheduling with Mixed Reality Simulation

SANDULA, AJAY KUMAR (Indian Institute of Science, Bengaluru); Khokhar, Arushi (Jaypee University of Information Technology); Ghose, Debasish (Indian Institute of Science); Biswas, PRADIPTA (Indian Institute of Science)

12:30-12:40 WeBT6.7

Augmenting Human Policies Using Riemannian Metrics for Human-Robot Shared Control

Oh, Yoojin (Max Planck Institute for Intelligent Systems); Passy, Jean-Claude (Max Planck Institute for Intelligent Systems, Tübingen); Mainprice, Jim (Max Planck Institute)

12:40-12:50 WeBT6.8

Effect of Handshake in VR Environment Via Robotic Arm on Psychological Distance

Mukuno, Haruto (Kogakuin University); Misaki, Daigo (Kogakuin University)

WeCT1 Track T1 (Sicily, 1F)

Human-Agent/Robot Interaction in Healthcare and Medicine (Special Session)

Chair: Park, Chung Hyuk George Washington University

Co-Chair: Park, Juyoun Korea Institute of Science and Technology

14:00-14:10 WeCT1.1

Enabling Robotic Pets to Autonomously Adapt Their Own Behaviors to Enhance Therapeutic Effects: A Data-Driven Approach

Bennett, Casey C. (Hanyang University); Sabanovic, Selma (Indiana University Bloomington); Stanojevic, Cedomir (Indiana University); Henkel, Zachary (Mississippi State University); Kim, Seongcheol (Hanyang University); Lee, Jinjae (Hanyang University); Henkel, Kenna Baugus (Mississippi State University); Piatt, Jennifer (Indiana University-Bloomington); Yu, Janghoon (Hanyang University); Oh, Jiyeong (Hanyang University); Collins, Sawyer (Indiana University Bloomington); Bethel, Cindy L. (Mississippi State University)

14:10-14:20 WeCT1.2

Evaluating Customization of Remote Tele-Operation Interfaces for Assistive Robots

Ranganeni, Vinitha (University of Washington); Ponto, Noah (University of Washington); Cakmak, Maya (University of Washington)

14:20-14:30 WeCT1.3

Robots and Aged Care: A Case Study Assessing Implementation of Service Robots in an Aged Care Home

Herath, Damith Chandana (University of Canberra); Martin, Lee (Lutheran Homes Barossa); Doolan, Sharni (University of Canberra); Grant, Janie Busby (University of Canberra)

14:30-14:40 WeCT1.4

SGGNet2: Speech-Scene Graph Grounding Network for Speech-Guided Navigation

Kim, Dohyun (Korea Adavanced Institute of Science and Technology); Kim, Yeseung (KAIST); Jaehwi, Jang (Korea Advanced Institute of Science and Technology); Song, Minjae (KAIST); Choi, Woojin (KAIST); Park, Daehyung (Korea Advanced Institute of Science and Technology, KAIST)

14:40-14:50 WeCT1.5

Vision-Based Human Identification with Face and Nametape Recognition in Aerial Casualty Monitoring System

Lee, Jaeyeon (Telemedicine and Advanced Technology Research Center (TATRC)); Quist, Ethan (TATRC); Chambers, Jonathan (USARMY); Peel, Justin (Arete); Roman, Kelly (Arete); Fisher, Nathan (US Army Telemedicine and Advanced Technology Research Center)

14:50-15:00 WeCT1.6

Diffusion Probabilistic Models-Based Noise Reduction for Enhancing the Quality of Medical Images

Lee, Jae-Hun (Yonsei University); Nam, Yoonho (Hankuk University of Foreign Studies); Kim, Dong-Hyun (Yonsei University); Ryu, Kanghyun (Korea Institute of Science and Technology)

WeCT4 Track T4 (Sydney, 2F)

Motivations and Emotions in Robotics (Regular Session)

Chair: Rossi, Silvia — Universita' Di Napoli Federico II

14:00-14:10 WeCT4.1

Feel for Me! Robot's Reactions to Abuse Influence Humans' Empathy

Rothermel, Anna Milena (University of Würzburg); Abrams, Anna (RWTH Aachen University); Rosenthal-von der Pütten, Astrid Marieke (RWTH Aachen University)

14:10-14:20 WeCT4.2

Nice and Nasty Theory of Mind for Social and Antisocial Robots

D'Angelo, Ilenia (University of Genoa); Morocutti, Lorenzo (University of Genoa); Giunchiglia, Enrico (Università Di Genova); Recchiuto, Carmine Tommaso (University of Genova); Sgorbissa, Antonio (University of Genova)

14:20-14:30 WeCT4.3

A Method for Selecting Scenes and Emotion-Based Descriptions for a Robot's Diary

Ichikura, Aiko (University of Tokyo); Kawaharazuka, Kento (The University of Tokyo); Obinata, Yoshiki (The University of Tokyo); Okada, Kei (The University of Tokyo); Inaba, Masayuki (The University of Tokyo)

14:30-14:40 WeCT4.4

The Emotional Dilemma: Influence of a Human-Like Robot on Trust and Cooperation

Becker, Dennis (University of Hamburg); Rueda, Diana (Universität Hamburg); Beese, Felix (University of Hamburg); Gutierrez Torres, Brenda Scarleth (Universität Hamburg); Lafdili, Myriem (Hamburg University); Ahrens, Kyra (University of Hamburg); Fu, Di (University of Hamburg); Strahl, Erik (Universität Hamburg); Weber, Tom (University of Hamburg); Wermter, Stefan (University of Hamburg)

14:40-14:50 WeCT4.5

Opening up to Social Robots: How Emotions Drive Self-Disclosure Behavior

Laban, Guy (University of Glasgow); Kappas, Arvid (Constructor University); Morrison, Val (Bangor University); Cross, Emily S (University of Glasgow)

14:50-15:00 WeCT4.6

Emotion Recognition of ASD Children Using Wavelet Analysis

Rashidan, Mohammad Ariff (International Islamic University Malaysia); Sidek, Shahrul Naim (International Islamic University Malaysia); Md Yusof, Hazlina (International Islamic University Malaysia); Ghazali, Aimi Shazwani (International Islamic University Malaysia); Rusli, Nazreen (IIUM)

15:00-15:10 WeCT4.7

A Software Framework to Encode the Psychological Dimensions of an Artificial Agent

Nardelli, Alice (University of Genoa); Recchiuto, Carmine Tommaso (University of Genova); Sgorbissa, Antonio (University of Genova)

15:10-15:20 WeCT4.8

Ethical Aspects of Faking Emotions in Chatbots and Social Robots

Indurkhya, Bipin (Jagiellonian University)

WeCT5 Track T5 (Miami, 2F)

Artificial Intelligence in HRI II (Regular Session)

Chair: Ahn, Ho Seok — The University of Auckland, Auckland

14:00-14:10 WeCT5.1

Tell Me More, Tell Me More: AI-Generated Question Suggestions for the Creation of Interactive Video Recordings

Chierici, Alberto (New York University Abu Dhabi); Habash, Nizar (New York University Abu Dhabi)

14:10-14:20 WeCT5.2

Robot Causal Discovery Aided by Human Interaction

Edström, Filip (Umeå University); Hellström, Thomas (Umeå University); de Luna, Xavier (Umeå University)

14:20-14:30 WeCT5.3

Shaping Imbalance into Balance: Active Robot Guidance of Human Teachers for Better Learning from Demonstrations

Hou, Muhan (Vrije University Amsterdam); Hindriks, Koen (Vrije Universiteit Amsterdam); Eiben, A.E. (VU Amsterdam); Baraka, Kim (Vrije Universiteit Amsterdam)

14:30-14:40 WeCT5.4

A Process-Oriented Framework for Robot Imitation Learning in Human-Centered Interactive Tasks

Hou, Muhan (Vrije University Amsterdam); Hindriks, Koen (Vrije Universiteit Amsterdam); Eiben, A.E. (VU Amsterdam); Baraka, Kim (Vrije Universiteit Amsterdam)

14:40-14:50 WeCT5.5

Backward Curriculum Reinforcement Learning

Ko, Kyung Min (Purdue University)

14:50-15:00 WeCT5.6

Real-Time Detection and Tracking of Surgical Instrument Based on YOLOv5 and DeepSORT

ZHANG, YOUQIANG (Pusan National University); Kim, Minhyo (Pusan National University); Jin, Sangrok (Pusan National University)

15:00-15:10 WeCT5.7

Predicting Navigational Performance of Dynamic Obstacle Avoidance Approaches Using Deep Neural Networks

Kästner, Linh (T-Mobile, TU Berlin); Alexander, Christian (Technical University Berlin); Ricardo Sosa, Melo (Technical University Berlin); Bo, Li (Technical University Berlin); Fatloun, Mohamad Bassel (Technische Universität Berlin); Lambrecht, Jens (Technische Universität Berlin)

15:10-15:20 WeCT5.8

No One Is an Island - Investigating the Need for Social Robots (and Researchers) to Handle Multi-Party Interactions in Public Spaces

Müller, Ana (University of Applied Sciences Cologne); Richert, Anja (University of Applied Sciences Cologne)

15:10-15:20 WeCT5.9

Optimizing Robot Arm Reaching Ability with Different Joints Functionality

Wang, Jiawen (Peking University); Zhang, Tao (Peking University); Wang, Yi (Peking University); Luo, Dingsheng (Peking University)

WeCT6 Track T6 (Venice, 2F)

Linguistic Communication and Dialogue (Regular Session)

Chair: Sudo, Yui — Honda Research Institute Japan

14:00-14:10 WeCT6.1

Natural Born Explainees: How Users' Personality Traits Shape the Human-Robot Interaction with Explainable Robots

Matarese, Marco (Italian Institute of Technology); Cocchella, Francesca (Italian Institute of Technology/University of Genoa); Rea, Francesco (Istituto Italiano Di Tecnologia); Sciutti, Alessandra (Italian Institute of Technology)

14:10-14:20 WeCT6.2

Extracting Robotic Task Plan from Natural Language Instruction Using BERT and Syntactic Dependency Parser

Lu, Shuang (Fraunhofer IGCV); Julia, Berger (Fraunhofer IGCV); Schilp, Johannes (Augsburg University)

14:20-14:30 WeCT6.3

Personality-Adapted Language Generation for Social Robots

Galatolo, Alessio (Uppsala University); Leite, Iolanda (KTH Royal Institute of Technology); Winkle, Katie (Uppsala University)

14:30-14:40 WeCT6.4

Indirect Politeness of Disconfirming Answers to Humans and Robots

Lumer, Eleonore (Bielefeld University); Lachenmaier, Clara (Bielefeld University); Zarrieß, Sina (Bielefeld University); Buschmeier, Hendrik (Bielefeld University)

14:40-14:50 WeCT6.5

The Effect of Human Prosody on Comprehension of TTS Robot Speech

Coyne, Adam K (Trinity College Dublin); McGinn, Conor (Trinity College Dublin)

14:50-15:00 WeCT6.6

Personality-Aware Natural Language Generation for Task-Oriented Dialogue Using Reinforcement Learning

Guo, Ao (Nagoya University); Ohashi, Atsumoto (Nagoya Universiry); Chiba, Yuya (NTT Communication Science Laboratories); Tsunomori, Yuiko (Nagoya University); Hirai, Ryu (Nagoya University); Higashinaka, Ryuichiro (Nagoya University/NTT)

15:00-15:10 WeCT6.7

Effects of Explanation Strategies to Resolve Failures in Human-Robot Collaboration

Khanna, Parag (KTH Royal Institute of Technology); Yadollahi, Elmira (KTH); Björkman, Mårten (KTH); Leite, Iolanda (KTH Royal Institute of Technology); Smith, Claes Christian (KTH Royal Institute of Technology)

15:10-15:20 WeCT6.8

Making an Android Robot Head Talk

Heisler, Marcel (Hochschule Der Medien Stuttgart); Kopp, Stefan (Bielefeld University); Becker-Asano, Christian (Stuttgart Media University)

WeCT7 Track T7 (Panorama, 16F)

Human-Robot Cooperation and Collaboration Environments (Regular Session)

Chair: Kim, Sanghyun — Kyung Hee University

14:00-14:10 WeCT7.1

A Multimodal Data Set of Human Handovers with Design Implications for Human-Robot Handovers

Khanna, Parag (KTH Royal Institute of Technology); Björkman, Mårten (KTH); Smith, Claes Christian (KTH Royal Institute of Technology)

14:10-14:20 WeCT7.2

Adapting to Human Preferences to Lead or Follow in Human-Robot Collaboration: A System Evaluation

Noormohammadi-Asl, Ali (University of Waterloo); Ayub, Ali (University of Waterloo); Smith, Stephen L. (University of Waterloo); Dautenhahn, Kerstin (University of Waterloo)

14:20-14:30 WeCT7.3

Navigating to Success in Multi-Modal Human-Robot Collaboration: Analysis and Corpus Release

Lukin, Stephanie (ARL); Pollard, Kimberly (Army Research Laboratory); Bonial, Claire (US Army Research Laboratory); Hudson, Taylor (Army Research Laboratory); Artstein, Ron (University of Southern California); Voss, Clare (Army Research Laboratory); Traum, David (USC)

14:30-14:40 WeCT7.4

Inference vs. Explicitness. Do We Really Need the Perfect Predictor? the Human-Robot Collaborative Object Transportation Case

Dominguez-Vidal, Jose Enrique (Institut De Robòtica I Informàtica Industrial, CSIC-UPC); Sanfeliu, Alberto (Universitat Politècnica De Cataluyna)

14:40-14:50 WeCT7.5

Force Sensorless Physical Interaction Based on Plastic Behavior Control without Inertia Shaping

Senoo, Taku (Hokkaido University); Konno, Atsushi (Hokkaido University)

14:50-15:00 WeCT7.6

Working Memory-Based Architecture for Human-Aware Navigation in Industrial Settings

Landolfi, Lorenzo (Istituto Italiano Di Tecnologia); Pasquali, Dario (Istituto Italiano Di Tecnologia); Nardelli, Alice (Istituto Italiano Di Tecnologia); Bernotat, Jasmin (Istituto Italiano Di Tecnologia); Rea, Francesco (Istituto Italiano Di Tecnologia)

15:00-15:10 WeCT7.7

Pointing Gestures for Human-Robot Interaction with the Humanoid Robot Digit

Lorentz, Viktor (Berlin University of Applied Sciences And Technology); Weiss, Manuel (Berlin University of Applied Sciences And Technology); Hildebrand, Kristian (Berlin University of Applied Sciences and Technology); Boblan, Ivo (Berliner Hochschule Fuer Technik)

WeDT1	Track T1 (Sicily, 1F)
Short and Long-Term Personalisation in Social HRI (Special Session)	
Chair: Andriella, Antonio	Pal Robotics
Co-Chair: Louie, Wing-Yue Geoffrey	Oakland University

15:30-15:40 WeDT1.1

Bayesian Theory of Mind for False Belief Understanding in Human-Robot Interaction

Hellou, Mehdi (University of Manchester); Vinanzi, Samuele (Sheffield Hallam University); Cangelosi, Angelo (University of Manchester)

15:40-15:50 WeDT1.2

Adaptive Human-Robot Collaboration: Evolutionary Learning of Action Costs Using an Action Outcome Simulator

Izquierdo-Badiola, Silvia (Eurecat); Alenyà, Guillem (CSIC-UPC); Rizzo, Carlos (University of Zaragoza)

15:50-16:00 WeDT1.3

Pimp My Language! the Influence of Robot Customization Duration on Psychological Ownership and Trust

Lacroix, Dimitri (Bielefeld University, Center for Cognitive Interaction Technolog); Schober, Jonathan (Bielefeld University); Wullenkord, Ricarda (CITEC, Bielefeld University); Eyssel, Friederike (Bielefeld University)

16:00-16:10 WeDT1.4

Wear Your Heart on Your Sleeve: Users Prefer Robots with Emotional Reactions to Touch and Ambient Moods

Bevill Burns, Rachael (Max Planck Institute for Intelligent Systems); Ojo, Fayokemi (Johns Hopkins University); Kuchenbecker, Katherine J. (Max Planck Institute for Intelligent Systems)

16:10-16:20 WeDT1.5

Unveiling the Learning Curve: Enhancing Transparency in Robot's Learning with Inner Speech and Emotions

Angelopoulos, Georgios (Interdepartmental Center for Advances in Robotic Surgery - ICARO); Di Martino, Carmine (University of Naples Federico II); Rossi, Alessandra (University of Naples Federico II); Rossi, Silvia (Universita' Di Napoli Federico II)

16:20-16:30 WeDT1.6

Evaluating People's Perception of Trust and Privacy Based on Robot's Appearance

Rossi, Alessandra (University of Naples Federico II); Koay, Kheng Lee (University of Hertfordshire); Rossi, Silvia (Universita' Di Napoli Federico II)

WeDT4	Track T4 (Sydney, 2F)
Haptic Interaction Design (Regular Session)	
Chair: Park, Jaeyoung	Hongik University

15:30-15:40 WeDT4.1

ISSC: Interactive Semantic Shared Control for Haptic Teleoperation

Yang, Dong (Technical University of Munich); Xu, Xiao (Technical University of Munich); Xiong, Mengchen (Technical University of Munich); Babaians, Edwin (Technical University of Munich); Wang, Zican (Technical University of Munich); Meng, Fanle (China Electronics Technology Group Corporation); Steinbach, Eckehard (Technical University of Munich)

15:40-15:50 WeDT4.2

Haptic Guidance Using a Transformer-Based Surgeon-Side Trajectory Prediction Algorithm for Robot-Assisted Surgical Training

Shi, Chang (UT Austin); Madera, Jonathan (University of Texas at Austin); Boyea, Heath (University of Texas at Austin); Majewicz Fey, Ann (University of Texas at Austin)

15:50-16:00 WeDT4.3

SmartBelt: A Wearable Microphone Array for Sound Source Localization with Haptic Feedback

Michaud, Simon (Université De Sherbrooke); Moffett, Benjamin (University of Sherbrooke); Tapia Rousiouk, Ana (Université De Montréal); Duda, Victoria (Université De Montréal); Grondin, Francois (Université De Sherbrooke)

16:00-16:10 WeDT4.4

Development of a Robot-Assisted Virtual Rehabilitation System with Haptic Feedback

Liou, Yan-Bo (National Cheng Kung University); LUO, SHAN (King's College London); Liu, Yen-Chen (National Cheng Kung University)

16:10-16:20 WeDT4.5

Research on Gait Change Using Visual and Force Sensory Stimuli Presentation System

Kondo, Kenshin (The University of Tokyo); Miyazaki, Tetsuro (The University of Tokyo); Sogabe, Maina (The University of Tokyo); Kawashima, Kenji (The University of Tokyo)

16:20-16:30 WeDT4.6

Quality of Task Perception Based Performance Optimization of Time-Delayed Teleoperation

Liu, Siwen (Technical University of Munich); Xu, Xiao (Technical University of Munich); Wang, Zican (Technical University of Munich); Yang, Dong (Technical University of Munich); Jin, Zhi (Sun Yat-Sen University); Steinbach, Eckehard (Technical University of Munich)

WeDT5	Track T5 (Miami, 2F)
Longitudinal HRI Studies and Social Navigation (Regular Session)	
Chair: Ayub, Ali	University of Waterloo
Co-Chair: Nehaniv, Chrystopher	University of Waterloo

15:30-15:40 WeDT5.1

How Do Human Users Teach a Continual Learning Robot in Repeated Interactions?

Ayub, Ali (University of Waterloo); Mehta, Jainish (University of Waterloo); Francesco, Zachary (University of Waterloo); Holthaus, Patrick (University of Hertfordshire); Dautenhahn, Kerstin (University of Waterloo); Nehaniv, Chrystopher (University of Waterloo)

15:40-15:50 WeDT5.2

Feeding the Coffee Habit: A Longitudinal Study of a Robo-Barista

Lim, Meiyii (Heriot-Watt University); Robb, David A. (Heriot Watt University); Wilson, Bruce W (Heriot-Watt University); Hastie, Helen (School of Mathematical and Computer Sciences, Heriot-Watt Univer)

15:50-16:00 WeDT5.3

SanTO in Exhibition – a Sacred Robot in the Profane

Trovato, Gabriele (Shibaura Institute of Technology); Pariasca, Franco (Pontificia Universidad Catolica Del Peru); Purizaga Tordoya, Arturo (Pontificia Universidad Catolica Del Peru); Luis Gonzales Miranda, Luis (Pontificia Universidad Catolica Del Peru); Rodriguez, Laureano (Pontificia Universidad Católica Del Perú)

16:00-16:10 WeDT5.4

Dance, Dance, Dance with My Hands: Third-Party Human Robot-Human Interactions

Circu, Silvia Sorina (University Paris 8); YUN, Bruno (University of Aberdeen); Chen, Chu-Yin (Paris 8 University); Kheddar, Abderrahmane (CNRS-AIST); Croitoru, Madalina (University of Montpellier)

16:10-16:20 WeDT5.5

CoBaIR: A Python Library for Context-Based Intention Recognition in Human-Robot-Interaction

Lubitz, Adrian (University of Bremen); Gutzeit, Lisa (University of Bremen); Kirchner, Frank (University of Bremen)

16:20-16:30 WeDT5.6

SocNavGym: A Reinforcement Learning Gym for Social Navigation

Kapoor, Aditya (Tata Consultancy Services); Swamy, Sushant (Birla Institute of Technology and Science, Pilani, K.K Birla Goa); Bachiller, Pilar (University of Extremadura); Manso, Luis J. (Aston University)

WeDT6 Track T6 (Venice, 2F)

Nonverbal Communication Skills in Humans and Robots (Regular Session)

Chair: Jokinen, Kristiina — AIRC, AIST, Japan and University of Helsinki, Finland

15:30-15:40 WeDT6.1

Predicting the Impressions of Interaction with a Robot from Physical Actions Using AICO-Corpus Annotations

Fujii, Ayaka (National Institute of Advanced Industrial Science and Technology); Jokinen, Kristiina (AIRC, AIST, Japan and University of Helsinki, Finland)

15:40-15:50 WeDT6.2

Recognizing Social Touch Gestures Using Optimized Class-Weighted CNN-LSTM Networks

Darlan, Daison (Kyungpook National University); Ajani, oladayo (Kyungpook National University); Parque, Victor (Waseda University); Mallipeddi, Rammohan (Kyungpook National University)

15:50-16:00 WeDT6.3

Development of Robot Guidance System Using Hand-Holding with Human and Measurement of Psychological Security

Nakane, Aoi (The Univeersity of Tokyo); Yanokura, Iori (University of Tokyo); Ichikura, Aiko (University of Tokyo); Okada, Kei (The University of Tokyo); Inaba, Masayuki (The University of Tokyo)

16:00-16:10 WeDT6.4

Real-Time Multimodal Turn-Taking Prediction to Enhance Cooperative Dialogue During Human-Agent Interaction

Bae, Youngho (Hanyang University); Bennett, Casey C. (Hanyang University)

16:10-16:20 WeDT6.5

Putting Robots in Context: Challenging the Influence of Voice and Empathic Behaviour on Trust

Romeo, Marta (Heriot-Watt University); Torre, Ilaria (Chalmers University of Technology); Le Maguer, Sébastien (ADAPT Centre / Trinity College Dublin); Cangelosi, Angelo (University of Manchester); Leite, Iolanda (KTH Royal Institute of Technology)

16:20-16:30 WeDT6.6

A Multi-Modal Interaction Robot Based on Emotion Estimation Method Using Physiological Signals Applied for Elderly

Suzuki, Kaoru (Shibaura Institute of Technology); Iguchi, Takumi (Shibaura Institute of Technology); NAKAGAWA, YURI (Shibaura Institute of Technology); Sugaya, Midori (Shibaura Institute of Technology)

WeDT7 Track T7 (Panorama, 16F)

Sound Design for Robots (Regular Session)

Chair: Nakadai, Kazuhiro — Tokyo Institute of Technology

15:30-15:40 WeDT7.1

Online Adaptation of Fourier Series Based Acoustic Transfer Function Model to Improve Sound Source Localization and Separation

Sudo, Yui (Honda Research Institute Japan); Takigahira, Masayuki (Honda Research Institute Japan Co., Ltd); Tsuru, Hideo (None); Nakadai, Kazuhiro (Tokyo Institute of Technology); Nakajima, Hirofumi (Kogakuin University)

15:40-15:50 WeDT7.2

Hearing It Out: Guiding Robot Sound Design through Design Thinking

Zhang, Brian John (Oregon State University); Orthmann, Bastian (KTH Royal Institute of Technology); Torre, Ilaria (Chalmers University of Technology); Bresin, Roberto (KTH Royal Institute of Technology); Fick, Jason (Oregon State University); Leite, Iolanda (KTH Royal Institute of Technology); Fitter, Naomi T. (Oregon State University)

15:50-16:00 WeDT7.3

Finding Its Voice: The Influence of Robot Voices on Fit, Social Attributes, and Willingness among Older Adults in the U.S. and Japan

Hsu, Long-Jing (Indiana University Bloomington); Khoo, Weslie (Indiana University); Randall, Natasha (Indiana University); Kamino, Waki (Indiana University Bloomington); Joshi, Swapna (Northeastern University); Sato, Hiroki (Indiana University Bloomington); Crandall, David (Indiana University); Tsui, Katherine (Toyota Research Institute); Sabanovic, Selma (Indiana University Bloomington)

16:00-16:10 WeDT7.4

Effects of Gender Neutralization on the Anthropomorphism of Natural and Synthetic Voices

Kuch, Johanna Magdalena (Augsburg University); Melchior, Frank (Hochschule Der Medien); Becker-Asano, Christian (Stuttgart Media University)

16:10-16:20 WeDT7.5

A Semi-Real-Time Method for Social Robots to Detect and Locate Overlapping Speech Events

Li, Yue (Vrije Universiteit Amsterdam); Hindriks, Koen (Vrije Universiteit Amsterdam); Kunneman, Florian (Vrije Universiteit Amsterdam)

WeET1	Track T1 (Sicily, 1F)
Designing Trustworthy Human Agent Interaction in Dynamic Context (Special Session)	
Chair: Fukuchi, Yosuke	Keio University
Co-Chair: Terada, Kazunori	Gifu University
16:40-16:50	WeET1.1
Nudge & Boost Agents: Designing Ambient Intelligent Systems to Effectively Influence Human Decision Making	
Ono, Tetsuo (Hokkaido University)	
16:50-17:00	WeET1.2
Perspective-Taking for Promoting Prosocial Behaviors through Robot-Robot VR Task	
Hang, Chenlin (The Graduate University for Advanced Studies); Ono, Tetsuo (Hokkaido University); Yamada, Seiji (National Institute of Informatics)	
17:00-17:10	WeET1.3
Automatic Joint Attention Generation between Local and Remote Persons through Telepresence Robot's Behavior	
Ikoma, Hibiki (Shizuoka University); Takeuchi, Yugo (Shizuoka University)	
17:10-17:20	WeET1.4
Advancing Humanoid Robots for Social Integration: Evaluating Trustworthiness through a Social Cognitive Framework	
Taliaronak, Volha (Humboldt-Universität Zu Berlin); Lange, Anna L. (Humboldt-Universität Zu Berlin); Kirtay, Murat (Tilburg University); Oztop, Erhan (Osaka University / Ozyegin University); Hafner, Verena Vanessa (Humboldt-Universität Zu Berlin)	
17:20-17:30	WeET1.5
Here's Looking at You, Robot: The Transparency Conundrum in Moral HRI	
Lee, Minha (Eindhoven University of Technology); Ruijten, Peter (Eindhoven University of Technology); Frank, Lily (Eindhoven University of Technology); IJsselsteijn, Wijnand (Technische Universiteit Eindhoven)	
17:30-17:40	WeET1.6
Shimeji Mushrooms That Look "emotional": How Appearance-Motion Interaction Can Elicit Emotional State Attribution to Objects	
Imaizumi, Taku (The University of Tokyo); Takahashi, Kohske (The University of Tokyo); Ueda, Kazuhiro (The University of Tokyo)	
17:40-17:50	WeET1.7
Empirical Investigation of How Robot's Pointing Gesture Influences Trust in and Acceptance of Heatmap-Based XAI	
Maehigashi, Akihiro (Shizuoka University); Fukuchi, Yosuke (National Institute of Informatics); Yamada, Seiji (National Institute of Informatics)	
17:50-18:00	WeET1.8
"They're Not Going to Do All the Tasks We Do": Understanding Trust and Reassurance towards a UV-C Disinfection Robot	
Galvez Trigo, Maria Jose (Cardiff University); Reyes-Cruz, Gisela (University of Nottingham); Maior, Horia Alexandru (University of Lincoln); Pepper, Cecily (University of Nottingham); Price, Dominic James (University of Nottingham); Leonard, Pauline (University of Southampton); Tochia, Chira (University of Southampton); Hyde, Richard (University of Nottingham); Watson, Nicholas (University of Nottingham); Fischer, Joel (University of Nottingham)	

WeET4 Track T4 (Sydney, 2F)

HRI and Collaboration in Manufacturing Environments (Regular Session)

Chair: Park, Chung Hyuk — George Washington University

16:40-16:50 WeET4.1

Where Should I Put My Mark? VR-Based Evaluation of HRI Modalities for Industrial Assistance Systems for Spot Repair

Puthenkalam, Jaison (AIT Austrian Institute of Technology); Zafari, Setareh (Vienna University of Technology); Sackl, Andreas (AIT Austrian Institute of Technology GmbH); Gallhuber, Katja (AIT Austrian Institute of Technology); Ebenhofer, Gerhard (PROFACTOR GmbH); Ikeda, Markus (PROFACTOR GmbH); Tscheligi, Manfred (Universtity of Salzburg)

16:50-17:00 WeET4.2

Benefits of Multi-Objective Trajectory Adaptation in Close-Proximity Human-Robot Interaction

Chuy, Oscar Jed (University of Florida); Sapra, Hritik (Georgia Institute of Technology); Tan, Xiang Zhi (Georgia Institute of Technology); Ravichandar, Harish (Georgia Institute of Technology); Chernova, Sonia (Georgia Institute of Technology)

17:00-17:10 WeET4.3

Spatio-Temporal Avoidance of Predicted Occupancy in Human-Robot Collaboration

Flowers, Jared (University of Florida); Faroni, Marco (University of Michigan); Wiens, Gloria (University of Florida); Pedrocchi, Nicola (National Research Council of Italy (CNR))

17:10-17:20 WeET4.4

Speech Act Classification in Collaborative Robotics

Kaszuba, Sara (Sapienza University of Rome); Sabbella, Sandeep Reddy (Sapienza University of Rome); Leotta, Francesco (Sapienza Università Di Roma); Nardi, Daniele (Sapienza University of Rome)

17:20-17:30 WeET4.5

Human-Robot Interaction Using VAHR: Virtual Assistant, Human, and Robots in the Loop

Amine, Ahmad (University of Pennsylvania); Aldilati, Mostafa (University of Central Florida); Hasan, Hadi (American University of Beirut); Maalouf, Noel (Lebanese American University); Elhajj, Imad (American University of Beirut)

17:30-17:40 WeET4.6

Manufacturing and Design of Inflatable Kirigami Actuators

Chung, Sewoong (Sungkyunkwan University); Coutinho, Altair (Sungkyunkwan University); Rodrigue, Hugo (Sungkyunkwan University)

17:40-17:50 WeET4.7

Analysis of Proximity and Risk for Trust Evaluation in a Human-Robot Chemical Industry Scenario

Campagna, Giulio (Aalborg University); Rehm, Matthias (Aalborg University)

17:50-18:00 WeET4.8

Graph-Based Semantic Planning for Adaptive Human-Robot-Collaboration in Assemble-To-Order Scenarios

Ma, Ruidong (University of Sheffield); CHEN, JINGYU (The University of Sheffield); Oyekan, John Oluwagbemiga (University of York)

WeET5 Track T5 (Miami, 2F)

Social Human-Robot Interaction of Human-Care Service Robot [Regular Paper] (Regular Session)

Chair: Ahn, Ho Seok — The University of Auckland, Auckland

16:40-16:50 WeET5.1

An HMM-Based Real-Time Intervention Methodology for a Social Robot Supporting Learning

Nasir, Jauwairia (University of Augsburg); Abderrahim, Mortadha (École Polytechnique Fédérale De Lausanne); Bruno, Barbara (Swiss Federal Institute of Technology in Lausanne (EPFL)); Dillenbourg, Pierre (EPFL)

16:50-17:00 WeET5.2

Stores Are Liable for Their Robots!? an Empirical Study on Liability in HRI with an Anthropomorphic Frontline Service Robot

Busch, Philip (Technische Universität Darmstadt); Kirchhoff, Jérôme (Technische Universität Darmstadt); Heinisch, Judith Simone (University of Kassel); David, Klaus (University of Kassel); von Stryk, Oskar (Technische Universität Darmstadt); Wendt, Janine (Technische Universität Darmstadt)

17:00-17:10 WeET5.3

Beyond Self-Report: A Continuous Trust Measurement Device for HRI

Lingg, Nico (Imperial College London); Demiris, Yiannis (Imperial College London)

17:10-17:20 WeET5.4

Towards Improving User Expectations of Robots by Leveraging Their Experience with Computer Vision Apps

Balali, Sogol (Oregon State University); Afflerbach, Ian (University of North Texas); Sowell, Ross T. (Rhodes College); West, Ruth (University of North Texas); Grimm, Cindy (Oregon State University)

17:20-17:30 WeET5.5

Designing Visual and Auditory Attention-Driven Movements of a Tabletop Robot

Fang, Yu (Honda Research Institute Japan Co., Ltd); Merino, Luis (Universidad Pablo De Olavide); Thill, Serge (Radboud University); Gomez, Randy (Honda Research Institute Japan Co., Ltd)

17:30-17:40 WeET5.6

Neural Network Implementation of Gaze-Target Prediction for Human-Robot Interaction

Somashekarappa, Vidya (University of Gothenburg); Sayeed, Asad (University of Gothenburg); Howes, Christine (University of Gothenburg)

17:40-17:50 WeET5.7

Older Adults' Emotional Challenges and Co-Design Preferences for a Social Robot after the COVID-19 Pandemic

Alhouli, Sarah (Swansea University); Almania, Nora (Swansea University); Ahmad, Muneeb (University of Swansea); Hyde, Martin (Swansea University); Sahoo, Deepak Ranjan (Swansea University)

17:50-18:00 WeET5.8

Changes in Embarrassment through Repeated Interactions with Robots in Public Spaces

Okafuji, Yuki (CyberAgent, Inc); Mitsui, Yuya (Ritsumeikan University); Matsumura, Kohei (Future University Hakodate); Baba, Jun (CyberAgent, Inc); Nakanishi, Junya (Osaka Univ)

WeET6 Track T6 (Venice, 2F)

Hand-Object Interaction: From Human Demonstrations to Robot Manipulation (Regular Session)

Chair: Yun, Sang-Seok — Silla University

16:40-16:50 WeET6.1

Gaussian Process-Based Prediction of Human Trajectories to Promote Seamless Human-Robot Handovers

Lockwood, Kyle (Northeastern University); Strenge, Garrit (Northeastern University); Bicer, Yunus (Northeastern University); Imbiriba, Tales (Northeastern University); Furmanek, Mariusz Pawel (University of Rhode Island); Padir, Taskin (Northeastern University); Erdogmus, Deniz (Northeastern University); Tunik, Eugene (Northeastern University); Yarossi, Mathew (Northeastern University)

16:50-17:00 WeET6.2

Evaluation of Perceived Intelligence for a Collaborative Manipulator Sharing Its Workspace with a Human Operator

Tusseyeva, Inara (Nazarbayev University); Oleinikov, Artemiy (Nazarbayev University); Sandygulova, Anara (Nazarbayev University); Rubagotti, Matteo (Nazarbayev University)

17:00-17:10 WeET6.3

A Framework for Improving Information Content of Human Demonstrations for Enabling Robots to Acquire Complex Tool Manipulation Skills

Shukla, Rishabh (University of Southern California); Manyar, Omey Mohan (University of Southern California); Ranparia, Devsmit (University of Southern California); Gupta, Satyandra K. (University of Southern California)

17:10-17:20 WeET6.4

Naturally Compliant Dexterous Anthropomorphic Hand Via Novel Modular Soft-Rigid Hybrid Robotics Approach: Design Rationale, Assembly Methods, and Evaluation

Lee, Peter Seungjune (University of Waterloo); Sjaarda, Cameron (University of Waterloo); Cornelious, Rhys (University of Waterloo); Gao, Run Ze (University of Waterloo); Lu, Kelly (University of Waterloo); Ren, Carolyn (University of Waterloo)

17:20-17:30 WeET6.5

Teaching a Robot Where Doors and Drawers Are and How to Handle Them

Cupec, Robert (J. J. Strossmayer University of Osijek); Vidović, Ivan (Faculty of Electrical Engineering, Computer Science and Informat); Šimundić, Valentin (Faculty of Electrical Engineering, Computer Science and Informat); Pejic, Petra (Faculty of Electrical Engineering, Computer Science and Informat); Foix, Sergi (CSIC-UPC); Alenyà, Guillem (CSIC-UPC)

17:30-17:40 WeET6.6

Towards Prediction of Motor Interference During Synchronous Human-Robot Arm Movements Using Subjective Ratings of Anthropomorphism

Kaya, Mertcan (Coburg University of Applied Sciences and Arts); Kühnlenz, Kolja (Coburg University of Applied Sciences and Arts)

17:40-17:50 WeET6.7

In Time and Space: Towards Usable Adaptive Control for Assistive Robotic Arms

Pascher, Max (Westphalian University of Applied Sciences); Kronhardt, Kirill (Westphalian University of Applied Sciences); Goldau, Felix Ferdinand (DFKI GmbH); Frese, Udo (Universität Bremen); Gerken, Jens (Westphalian University of Applied Sciences)

17:50-18:00 WeET6.8

An Anthropomorphic Robotic Hand with a Soft-Rigid Hybrid Structure and Positive-Negative Pneumatic Actuation

Zhang, Chaozhou (Xi'an Jiaotong University); Li, Min (Xi'an Jiaotong University); YuShen, Chen (Xi'an Jiaotong University); Yang, Zhanshuo (Xi'an Jiaotong University); Bo, He (Xi'an Jiaotong University); Li, Xiaoling (Xi'an Jiaotong University); Xie, Jun (Xi'an Jiaotong University); Xu, Guanghua (School of Mechanical Engineering, Xi'an Jiaotong University)

WeET7 Track T7 (Panorama, 16F)

User-Centered Design of Robots (Regular Session)

Chair: Lee, Hui Sung — UNIST (Ulsan National Institute of Science and Technology)

16:40-16:50 WeET7.1

Identifying Requirements for the Implementation of Robot-Assisted Physical Therapy in Humanoids: A User-Centered Design Approach

Nertinger, Simone (Technical University of Munich); Naceri, Abdeldjallil (Technical University of Munich); Haddadin, Sami (Technical University of Munich)

16:50-17:00 WeET7.2

Development of a Deformable and Flexible Robot for Pain Communication: Field Study of ALH-E in the Hospital

Kim, Dongyoon (Ulsan National Institute of Science and Technology); Kwak, Yoon Joung (UNIST); Yun, Seungho (UNIST); Kim, Byounghern (Ulsan National Institute of Science and Technology); Chae, Sanghoon (Korea Advanced Institute of Science and Technology (KAIST)); Lee, Hui Sung (UNIST (Ulsan National Institute of Science and Technology))

17:00-17:10 WeET7.3

Failure Explanation in Privacy-Sensitive Contexts: An Integrated Systems Approach

Li, Sihui (Colorado School of Mines); SIVA, SRIRAM (Colorado School of Mines); Mott, Terran (Colorado School of Mines); Williams, Tom (Colorado School of Mines); Zhang, Hao (Colorado School of Mines); Dantam, Neil (Colorado School of Mines)

17:10-17:20 WeET7.4

Confrontation and Cultivation: Understanding Perspectives on Robot Responses to Norm Violations

Mott, Terran (Colorado School of Mines); Williams, Tom (Colorado School of Mines)

17:20-17:30 WeET7.5

Exploring the Personality Design Space of Robots. Personality and Design Implications for Non-Anthropomorphic Wellness Robots

Chowdhury, Aparajita (Tampere University); Ahtinen, Aino (Tampere University); Wu, Chia-Hsin (Tampere University); Vaananen, Kaisa (Tampere University); Taibi, Davide (Tampere University); Pieters, Roel S. (Tampere University)

17:30-17:40 WeET7.6

The Eyes and Hearts of UAV Pilots: Observations of Physiological Responses in Real-Life Scenarios

Duval, Alexandre (École De Technologie Supérieure); Paas, Anita (Concordia University); Abdalwhab, Abdalwhab (École De Technologie Supérieure); St-Onge, David (Ecole De Technologie Superieure)

17:40-17:50 WeET7.7

Human-Robot Interaction in Retinal Surgery: A Comparative Study of Serial and Parallel Cooperative Robots

Zhao, Botao (Johns Hopkins University); Esfandiari, Mojtaba (Johns Hopkins University); Usevitch, David (Johns Hopkins University); Gehlbach, Peter (Johns Hopkins Medical Institute); Iordachita, Ioan Iulian (Johns Hopkins University)

Technical Program for Thursday August 31, 2023

ThAT1 Track T1 (Sicily, 1F)

Cognition & Assistive Robots (Special Session)

Chair: Ayub, Ali — University of Waterloo

Co-Chair: Holthaus, Patrick — University of Hertfordshire

10:30-10:40 ThAT1.1

Optometrist's Algorithm for Personalizing Robot-Human Handovers

Gupte, Vivek (Birla Institute of Technology and Science - Pilani, Goa, India); Suissa, Dan Rouven (Ben-Gurion University of the Negev); Edan, Yael (Ben-Gurion University of the Negev)

10:40-10:50 ThAT1.2

A Case of Identity: Enacting Robot Identity with Belief Propagation for Decentralized Multi-Agent Task Allocation

Berry, Jasmine (University of Michigan); Olson, Elizabeth (University of Michigan); Gilbert, Alia (University of Michigan); Jenkins, Odest Chadwicke (University of Michigan)

10:50-11:00 ThAT1.3

Bio-Inspired Cognitive Decision-Making to Personalize the Interaction and the Selection of Exercises of Social Assistive Robots in Elderly Care

Maroto-Gómez, Marcos (Universidad Carlos III De Madrid); Carrasco-Martínez, Sara (Universidad Carlos III De Madrid); Marques Villarroya, Sara (Universidad Carlos III of Madrid); Malfaz, Maria (Universidad Carlos III De Madrid); Castro González, Álvaro (Universidad Carlos III De Madrid); Salichs, Miguel A. (University Carlos III of Madrid)

11:00-11:10 ThAT1.4

A Personalized Household Assistive Robot That Learns and Creates New Breakfast Options through Human-Robot Interaction

Ayub, Ali (University of Waterloo); Nehaniv, Chrystopher (University of Waterloo); Dautenhahn, Kerstin (University of Waterloo)

11:10-11:20 ThAT1.5

Evaluation of a Multimodal Sensory Feedback Device for Displaying Proprioceptive Data from a Robotic Grasper

Molina, Alicia (Georgia Tech Student Center); Kelly, Erin (Georgia Institute of Technology); Majditehran, Houriyeh (Georgia Institute of Technology); Hammond III, Frank L. (Georgia Institute of Technology)

11:20-11:30 ThAT1.6

Developing Adaptive, Personalised, Autonomous Social Robots Using Physiological Signals: System Development and a Pilot Study

chandra, shruti (University of Waterloo); Sharma, Isha (University of Waterloo); Schnapp, Benjamin David (University of Waterloo); Dixon, Michael (University of Waterloo); Dautenhahn, Kerstin (University of Waterloo)

11:30-11:40 ThAT1.7

Realizing an Assist-As-Needed Robotic Dressing Support System through Analysis of Human Movements and Residual Abilities

Yamasaki, Kakeru (Kyushu Institute of Technology); Kajiwara, Takumi (Kyushu Institute of Technology); Fujita, Wataru (Kyushu Institute of Technology); Shibata, Tomohiro (Kyushu Institute of Technology)

11:40-11:50 ThAT1.8

Is a Robot Trustworthy Enough to Delegate Your Control?

Shin, Soomin (KIST); Kang, Dahyun (Korea Institute of Science and Technology); Kwak, Sonya Sona (Korea Institute of Science and Technology (KIST))

ThAT2 Track T2 (Grand Ballroom, 2F)

Ethical Issues in Human-Robot Interaction Research (Regular Session)

Chair: Kim, Boyoung George Mason University Korea

10:30-10:40 ThAT2.1

What's at Stake? Robot Explanations Matter for High but Not Low Stake Scenarios

Melsion, Gaspar Isaac (KTH Royal Institute of Technology); Stower, Rebecca (KTH); Winkle, Katie (Uppsala University); Leite, Iolanda (KTH Royal Institute of Technology)

10:40-10:50 ThAT2.2

Ethical Design for Privacy-Related Communication in Human-Robot Interaction

Weng, Yueh-Hsuan (Tohoku University); Francesconi, Enrico (IGSG-CNR)

10:50-11:00 ThAT2.3

The Impact of Different Ethical Frameworks Underlying a Robot's Advice on Charitable Donations

Kim, Boyoung (George Mason University Korea); Wen, Ruchen (Colorado School of Mines); Zhu, Qin (Virginia Tech); Williams, Tom (Colorado School of Mines); Phillips, Elizabeth (George Mason University)

11:00-11:10 ThAT2.4

Victims and Observers: How Gender, Victimization Experience, and Biases Shape Perceptions of Robot Abuse

Garcia Goo, Hideki (University of Twente); Winkle, Katie (Uppsala University); Williams, Tom (Colorado School of Mines); Strait, Megan (The University of Texas Rio Grande Valley)

11:10-11:20 ThAT2.5

Trust in Robot Self-Defense: People Would Prefer a Competent, Tele-Operated Robot That Tries to Help

Kochenborger Duarte, Eduardo (Halmstad University); Shiomi, Masahiro (ATR); Vinel, Alexey (Halmstad University); Cooney, Martin (Halmstad University)

11:20-11:30 ThAT2.6

Ethical Participatory Design of Social Robots through Co-Construction of Participatory Design Protocols

Datey, Isha (Oakland University); Soper, Hunter (Oakland University); Hossain, Khadeejah (Oakland University); Louie, Wing-Yue Geoffrey (Oakland University); Zytko, Douglas (Oakland University)

11:30-11:40 ThAT2.7

The Invisible Labor of Authoring Dialogue for Teleoperated Socially Assistive Robots

Elbeleidy, Saad (Colorado School of Mines); Reddy, Elizabeth (Colorado School of Mines); Williams, Tom (Colorado School of Mines)

11:40-11:50 ThAT2.8

Grounding Robot Navigation in Self-Defense Law

Zhu, James (Carnegie Mellon University); Shrivastava, Anoushka (Carnegie Mellon University); Johnson, Aaron M. (Carnegie Mellon University)

ThAT3 Track T3 (Capri, 2F)

Robot Companions and Social Robots (Regular Session)

Chair: Rossi, Silvia — Universita' Di Napoli Federico II

10:30-10:40 ThAT3.1

I = Robot: An Investigation of How Perspective Switching Can Support People's Acceptance of AI-Powered Social Robots

Wittmann, Maximilian (Friedrich-Alexander-Universität Erlangen-Nürnberg); Köhler, Lena (FAU Erlangen-Nuremberg); Morschheuser, Benedikt (Gamification Research Group, Friedrich-Alexander-Universität Erl)

10:40-10:50 ThAT3.2

Human Perception on Social Robot's Face and Color Expression Using Computational Emotion Model

Dzhoroev, Temirlan (Ulsan National Institute of Science & Technology); Park, Haeun (Ulsan National Institue of Science and Technology (UNIST)); Lee, Jiyeon (Ulsan National Institute of Science and Technology); Kim, Byounghern (Ulsan National Institute of Science and Technology); Lee, Hui Sung (UNIST (Ulsan National Institute of Science and Technology))

10:50-11:00 ThAT3.3

Add-If-Silent Rule-Based Growing Neural Gas for High-Density Topological Structure of Unknown Objects

Shoji, Masaya (ROBOTIS Co., Ltd. / AIIT / Tokyo Metropolitan University); Obo, Takenori (Tokyo Metropolitan University); Kubota, Naoyuki (Tokyo Metropolitan University)

11:00-11:10 ThAT3.4

Social Robot Dressing Style: An Evaluation of Interlocutor Preference for University Setting

Ashok, Ashita (RPTU Kaiserslautern-Landau); Paplu, Sarwar (Technische Universität Kaiserslautern); Berns, Karsten (University of Kaiserslautern)

11:10-11:20 ThAT3.5

Development and Evaluation of a Meal Partner Robot Platform

Fujii, Ayaka (National Institute of Advanced Industrial Science and Technology); Okada, Kei (The University of Tokyo); Inaba, Masayuki (The University of Tokyo)

11:20-11:30 ThAT3.6

Diversity-Aware Verbal Interaction between a Robot and People with Spinal Cord Injury

Grassi, Lucrezia (University of Genova); Canepa, Danilo (University of Genoa); Bellitto, Amy (University of Genoa); Casadio, Maura (University of Genoa); Massone, Antonino (S.C. Unità Spinale Unipolare, Santa Corona Hospital, ASL2 Savone); Recchiuto, Carmine Tommaso (University of Genova); Sgorbissa, Antonio (University of Genova)

11:30-11:40 ThAT3.7

Social Robots As Companions for Lonely Hearts: The Role of Anthropomorphism and Robot Appearance

Jung, Yoonwon (Seoul National University); Hahn, Sowon (Seoul National University)

11:40-11:50 ThAT3.8

Perceived Sociality and Persuasion: Investigating the Effects of Social and Technical Framing on Human-Robot Interaction

Boos, Annika (Technical University of Munich); Emmermann, Birte (Technical University of Munich); Reiner, Maximilian (Technical University of Munich); Bengler, Klaus (Technical University of Munich)

ThAT4 Track T4 (Sydney, 2F)

Robots in Education, Therapy and Rehabilitation (Regular Session)

Chair: Tapus, Adriana — ENSTA Paris, Institut Polytechnique De Paris

10:30-10:40 ThAT4.1

MoveToCode: An Embodied Augmented Reality Visual Programming Language with an Autonomous Robot Tutor for Promoting Student Programming Curiosity

Groechel, Thomas (Univeristy of Southern California); Ipek, Goktan (University of Southern California); Ly, Karen (University of Southern California); Velentza, Anna-Maria (University of Southern California); Mataric, Maja (University of Southern California)

10:40-10:50 ThAT4.2

Adapting a Teachable Robot's Dialog Responses Using Reinforcement Learning in Teaching Conversation

Love, Rachel (Monash University); Law, Edith (University of Waterloo); Cohen, Philip R (Openstream Inc., Monash University); Kulic, Dana (Monash University)

10:50-11:00 ThAT4.3

Dancing in a Tutu: Using a Ballet Robot to Encourage Young Girls into Robotics

Gong, Jiayong (The University of Auckland); Yu, Stephy (The University of Auckland); Fowler, Allan (The University of Auckland); Sutherland, Craig (University of Auckland)

11:00-11:10 ThAT4.4

Benefits, Challenges and Research Recommendations for Social Robots in Education and Learning: A Meta-Review

Barakova, Emilia I. (Eindhoven University of Technology); Vaananen, Kaisa (Tampere University); Kaipainen, Kirsikka (Tampere University); Markopoulos, Panos (Eindhoven University of Technology)

11:10-11:20 ThAT4.5

Robots in Education: Influence of Regulatory Focus Theory

Hei, Xiaoxuan (ENSTA Paris, Institut Polytechnique De Paris); Zhang, Heng (ENSTA Paris, Institut Polytechnique De Paris); Tapus, Adriana (ENSTA Paris, Institut Polytechnique De Paris)

11:20-11:30 ThAT4.6

A Study of Demonstration-Based Learning of Upper-Body Motions in the Context of Robot-Assisted Therapy

Quiroga, Natalia (Hochschule Bonn-Rhein-Sieg (H-BRS)); Mitrevski, Alex (Hochschule Bonn-Rhein-Sieg); Plöger, Paul G. (Hochschule Bonn Rhein Sieg)

11:30-11:40 ThAT4.7

The Impact of Robot Co-Location on Student Learning Experiences When Reasoning about Geometry

Grosso, Veronica (University of Illinois Chicago); Michaelis, Joseph (University of Illinois Chicago)

11:40-11:50 ThAT4.8

A Companion for Aphasia Training: Development and Early Stakeholder Evaluation of a Robot-Assisted Speech Training App

Linden, Katharina Friederike (TH Köln - University of Applied Sciences); Arndt, Julia (TH Köln - University of Applied Sciences); Neef, Caterina (TH Köln - University of Applied Sciences); Richert, Anja (University of Applied Sciences Cologne)

ThAT5 Track T5 (Miami, 2F)

Social Intelligence for Robots II (Regular Session)

Chair: Lim, Yoonseob — Korea Institute of Science and Technology

10:30-10:40 ThAT5.1

Robot Self-Recognition Via Facial Expression Sensorimotor Learning

ZHEGONG, SHANGGUAN (ENSTA-Paris); Ding, Mengyuan (Xi'an Jiaotong University); Yu, Chuang (University of Manchester); Chen, Chaona (University of Glasgow); Tapus, Adriana (ENSTA Paris, Institut Polytechnique De Paris)

10:40-10:50 ThAT5.2

What Properties of Norms Can We Implement in Robots?

Malle, Bertram (Brown University); Rosen, Eric (Brown University); Chi, Vivienne Bihe (Brown University); Ramesh, Dev (Brown Univeristy)

10:50-11:00 ThAT5.3

CLIPGraphs: Multimodal Graph Networks to Infer Object-Room Affinities

Agrawal, Ayush (Robotics Research Center, IIIT Hyderabad); Arora, Raghav (IIIT Hyderabad); Datta, Ahana (International Institute of Information Technology, Hyderabad); Banerjee, Snehasis (Iiit-H / Tcs); Bhowmick, Brojeshwar (Tata Consultancy Services); Jatavallabhula, Krishna Murthy (MIT); Sridharan, Mohan (University of Birmingham); Krishna, Madhava (IIIT Hyderabad)

11:00-11:10 ThAT5.4

Come Closer: The Effects of Robot Personality on Human Proxemics Behaviours

Moujahid, Meriam (Heriot-Watt University); Robb, David A. (Heriot Watt University); Dondrup, Christian (Heriot-Watt University); Hastie, Helen (School of Mathematical and Computer Sciences, Heriot-Watt University)

11:10-11:20 ThAT5.5

Exophora Resolution of Linguistic Instructions with a Demonstrative Based on Real-World Multimodal Information

Oyama, Akira (Ritsumeikan University); Hasegawa, Shoichi (Ritsumeikan University); Nakagawa, Hikaru (Ritsumeikan University); Taniguchi, Akira (Ritsumeikan University); Hagiwara, Yoshinobu (Ritsumeikan University); Taniguchi, Tadahiro (Ritsumeikan University)

11:20-11:30 ThAT5.6

Measuring Situational Awareness Latency in Human-Robot Teaming Experiments

Senaratne, Hashini Hiranya (CSIRO); Pitt, Alex (CSIRO); Talbot, Fletcher (CSIRO); Moghadam, Peyman (CSIRO); Sikka, Pavan (CSIRO); Howard, David (CSIRO); Williams, Jason (CSIRO); Kulic, Dana (Monash University); Paris, Cecile (CSIRO)

11:30-11:40 ThAT5.7

SoGrIn: A Non-Verbal Dataset of Social Group-Level Interactions

Webb, Nicola (University of the West England); Giuliani, Manuel (University of the West of England, Bristol); Lemaignan, Séverin (PAL Robotics)

11:40-11:50 ThAT5.8

Towards a System That Allows Robots to Use Commitments in Joint Action with Humans

Repiso, Ely (LAAS-CNRS, Toulouse); Sarthou, Guillaume (LAAS-CNRS); Clodic, Aurélie (Laas - Cnrs)

ThAT6 Track T6 (Venice, 2F)

Visual and Haptic Cues for Physical Human-Robot Interaction and Co-Manipulation (Special Session)

Chair: Pierri, Francesco — Università Della Basilicata

10:30-10:40 — ThAT6.1

Assistive Force Control in Collaborative Human-Robot Transportation

Cavalcante Lima, Bruno Gabriel (University of Salerno); Ferrentino, Enrico (University of Salerno); Chiacchio, Pasquale (Università Di Salerno); Vento, Mario (University of Salerno)

10:40-10:50 — ThAT6.2

Enhancing Contact Stability in Admittance-Type Haptic Interaction Using Bidirectional Time-Domain Passivity Control

Park, Seong-Su (Korea Advanced Institute of Science and Technology); Dinc, Huseyin Tugcan (Korea Advanced Institute of Science and Technology (KAIST)); Lee, Kwang-Hyun (Korea Advanced Institute of Science and Technology); Ryu, Jee-Hwan (Korea Advanced Institute of Science and Technology)

10:50-11:00 — ThAT6.3

Depth Image-Based Deformation Estimation of Deformable Objects for Collaborative Mobile Transportation

Nicola, Giorgio (CNR); Mutti, Stefano (CNR STIIMA); Villagrossi, Enrico (Italian National Research Council); Pedrocchi, Nicola (National Research Council of Italy (CNR))

11:00-11:10 — ThAT6.4

HRI-Based Gaze-Contingent Eye Tracking for Autism Spectrum Disorder Treatment: A Preliminary Study Using a NAO Robot

Brienza, Michele (University of Basilicata); Laus, Francesco (University of Basilicata); Guglielmi, Vito (University of Basilicata); Carriero, Graziano (University of Basilicata); Sileo, Monica (University of Basilicata); Grisolia, Mariantonietta (IRCCS Fondazione Stella Maris Mediterraneo); Palermo, Giuseppina (IRCCS Fondazione Stella Maris Mediterraneo); Bloisi, Domenico (University of Basilicata); Pierri, Francesco (Università Della Basilicata); Turi, Marco (IRCCS Fondazione Stella Maris Mediterraneo); Muratori, Filippo (IRCCS, Scientific Institute Stella Maris, Pisa)

11:10-11:20 — ThAT6.5

Redundant Multi-DoF Robot Arm Co-Operation through the Body Integration System

Suzuki, Hyuga (Nagoya Institute of Technology); Yukawa, Hikari (Nagoya Institute of Technology); Minamizawa, Kouta (Keio University); Tanaka, Yoshihiro (Nagoya Institute of Technology)

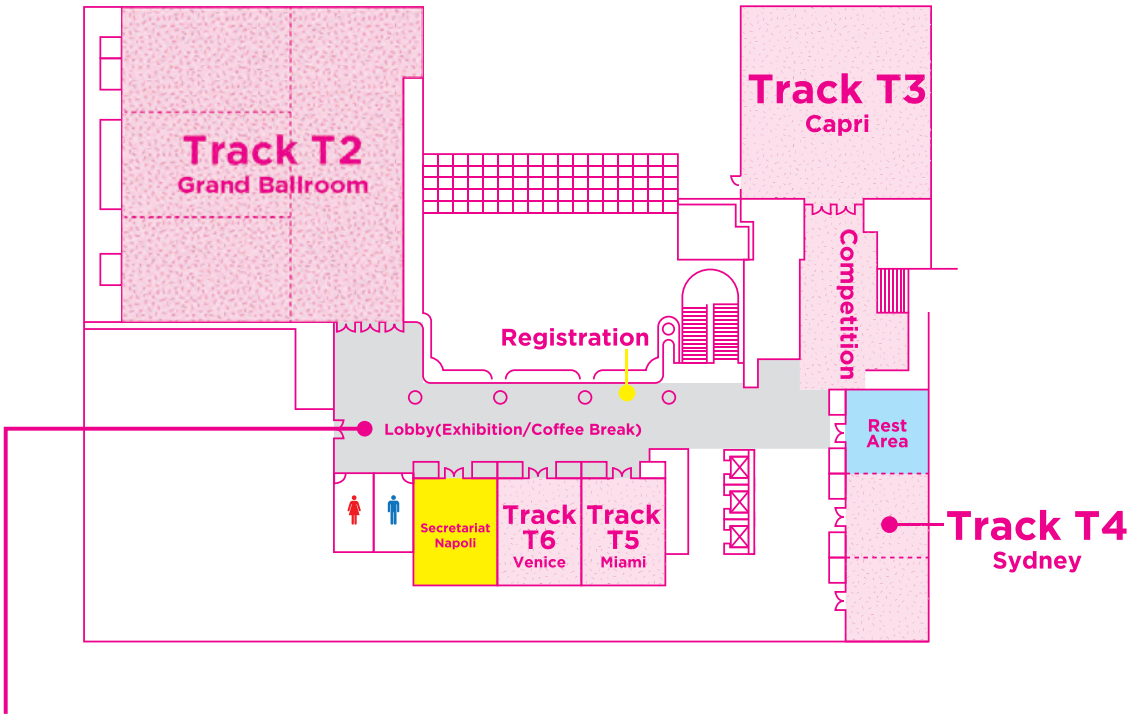
11:20-11:30 — ThAT6.6

Visual and Haptic Cues for Human-Robot Handover

Costanzo, Marco (Università Degli Studi Della Campania "Luigi Vanvitelli"); Natale, Ciro (Università Degli Studi Della Campania "Luigi Vanvitelli"); Selvaggio, Mario (Università Degli Studi Di Napoli Federico II)

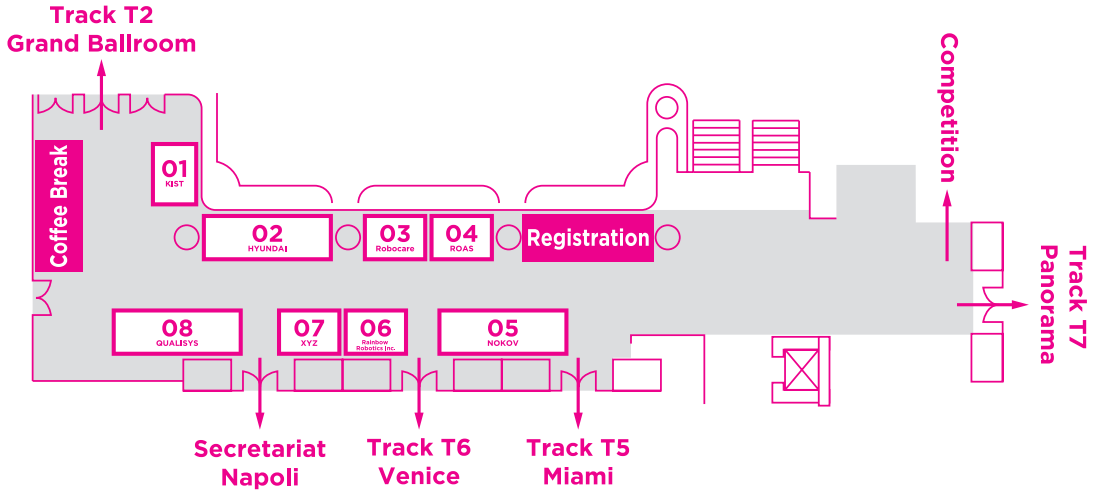
VIII Exhibition & Sponsors

- Exhibition time: 9:00 am-6:00 pm, August 29-30, 2023. / 9:00 am-4:00 pm, August 31, 2023
- Location: Lobby, 2F



Exhibiton

01 Korea Institute of Science and Technology
02 Hyundai Motor Company Robotics Lab
03 Robocare
04 ROAS
05 NOKOV Motion Capture
06 Rainbow Robotics
07 XYZ
08 Qualisys AB



AI · Robotics Institute of KIST (Korea Institute of Science and Technology)

Booth No. 1		
KIST Korea Institute of Science and Technology	**President**	Dr. Ig-Jae Kim
	Address	[02792] 5, Hwarang-ro 14-gil Seongbuk-gu Seoul Korea
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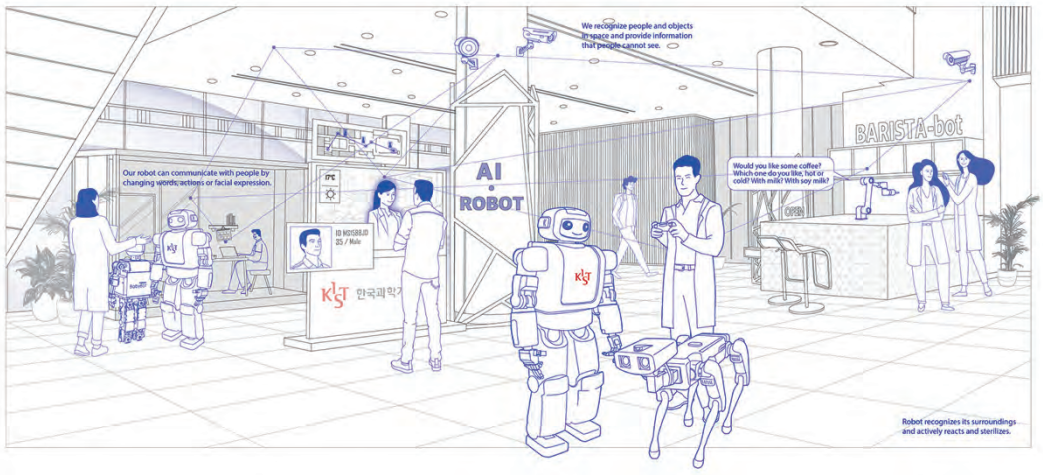
	Website	kist.re.kr
	Contents of Exhibit	Introduction to AI · Robotics Institute in KIST

Introduction

Artificial Intelligence and Robotics Institute is dedicated to developing core and applied technologies in the fields of advanced AI and robotics in order to overcome national challenges and social issues, help the citizens enjoy more comfortable, safer and healthier lives, while creating new values for the future society.
There are three centers – Center for Artificial Intelligence, Center for Intelligent and Interactive Robotics, and Center for Healthcare Robotics.



Hyundai Motor Company (Robotics LAB)

Booth No. 2		
HYUNDAI	**President**	JAEHOON CHANG
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	Email	tosungjun@hyundai.com
	Website	https://robotics.hyundai.com/
	Contents of Exhibit	Robotics LAB promotion and recruitment counseling

Introduction

Robotics LAB is an organization that researches robotics technology under Hyundai Motor's R&D philosophy of developing technology for humanity and its vision to become a major future mobility provider.
Robotics LAB is a team of experts in various fields working on articulated robot technology represented by wearable robots, service robot technology, which is an aggregate of HRI solutions, and innovative mobility solutions with internalized core HW and SW technology to build an advanced service business system.

Robocare

Booth No. 3		
Robocare (주)로보케어	**President**	JeonIl Moon
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	Email	robocare@robocare.co.kr
	Website	http://www.robocare.co.kr/index_en.php
	Contents of Exhibit	Healthcare Robot / Care Robot / AI

Introduction

Robocare was established in October 2012 as the first technology investment company from the Korea Institute of Science and Technology (KIST). Robocare is committed to developing robots for the socially disadvantaged. They have developed 'SILBOT', a group-based (8-12 people) cognitive training robot for dementia prevention used at public health centers and dementia relief centers across the country, along with 'BOMI-1', an individual cognitive training robot for dementia prevention. They also developed 'BOMI-2', a home care robot that helps with daily life based on autonomous driving, and 'DORI', a developmental disorder (ADHD) screening and educational robot for elementary school students. SILBOT, a robot designed for dementia relief, successfully completed a pilot program in 2016 at four centers, including one in Yeongtong-gu, Suwon-si. Since then, it has been widely promoted and supplied to various health centers and dementia relief centers across South Korea. SILBOT's influence is expanding further through installations at regional bases, senior welfare centers, and nursing hospitals. Additionally, a home care robot called BOMI-2 is being demonstrated as part of a social support project for the elderly with mild cognitive impairment in Gwangmyeong-si, Seongnam-si, and Gwangyang-si.

ROAS

Booth No. 4		
ROAS Robotics on Advanced Solution 주식회사 로 아 스	**President**	CHANG GU KIM
	Address	4FL, LS Mtron Hi-tech Center, 39, LS-ro 116beon-gil, Dongan-gu, Anyang-si, Gyeonggi-do, Republic of Korea
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	Email	sales@roas.co.kr / support@roas.co.kr
	Website	https://roas.co.kr
	Contents of Exhibit	Go1, Turtlebot4

Introduction

ROAS is specialized robot company, We provide Industry robot solution and based ROS research and development robot solution, service robot solution to industry as a whole.
Industrial robot solutions based on 3D Vision and AGV/AMR are provided to Smart Factory and logistics automation, and robot solutions based on ROS are supplied to universities, national research institutes, and corporate research institutes.
Service robot solutions based on delivery/patrol/transfer/guidance functions are available in a variety of service areas.

NOKOV Motion Capture

Booth No. 5		
NOKOV Motion Capture	**President**	Meng Jie
	Address	Room820, China Minmetals Tower, Chaoyang Dist., Beijing
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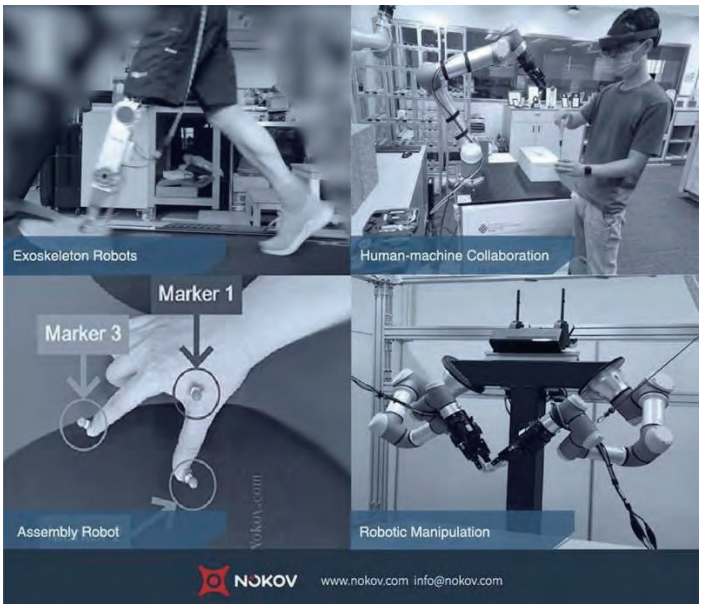
	Email	info@nokov.com
	Website	https://en.nokov.com/
	Contents of Exhibit	Motion capture camera

Introduction

NOKOV Mocap is a company focused on optical 3D motion capture systems, specializing in research, development, manufacturing, and related technical services.
NOKOV Motion Capture System, designed with proprietary intellectual property rights, provides world-leading performance in resolution, frame rate, latency, and precision.
By using high-performance infrared cameras, NOKOV can locate the position of a set of reflective markers and build 3D motion data through its analysis system. This is an ideal solution for motion capture in fields such as robotics, UAVs, virtual reality, sports biomechanics, movement analysis, gait rehabilitation, ergonomics, film animation, and game production.



Rainbow Robotics Inc.

Booth No. 6		
RAINBOW ROBOTICS	**President**	Jungho Lee
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	Email	rainbow@rainbow-robotics.com
	Website	www.rainbow-robotics.com
	Contents of Exhibit	Collaborative robot RB Series

Introduction

Rainbow Robotics, founded by experienced researchers from the prestigious KAIST Humanoid Robot Research Center (HUBO Lab), leads the robot platforms industry. Our mission is to commercialize cutting-edge robots through relentless research and development. We achieve this by securing our own technology and offering high-quality products at competitive prices.
With expertise in humanoid robotics technology, we proudly showcase our in-house developed cobots and world-renowned disaster response robots. However, our commitment to innovation and making a significant impact goes beyond these achievements. Our diverse portfolio includes collaborative robots, autonomous mobile robots, quadruped robots, and astronomical mounts. We continuously explore new business opportunities, aiming to revolutionize the robotics industry and shape the future of automation.

XYZ

Booth No. 7		
XYZ	**President**	Hwang Sungjae
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	Contents of Exhibit	AI ROBOT

Introduction

XYZ is a service robot startup established based on the vision of “ROBOTS INTO OUR DAILY LIFE”. We are solving problems in the retail market. It is a startup that puts various robot technologies to practical use, from intelligent food and beverage automation robots to self-driving service robots. Dr. Hwang Sungjae, who founded Future Play Co., Ltd., Korea’s representative technology startup accelerator, and founder of Fluenty Co., Ltd., an artificial intelligence startup acquired by Samsung Electronics for the first time in Korea. Director Kim Byeongjo, who worked as a venture capitalist in Future Play Co., Ltd., It is operated by Director Min Junghoo, who founded Cobot, and Director Kim Seongbin, who founded Ouya Co., Ltd. In addition, we have attracted a cumulative investment of KRW 15 billion from leading partners such as Samsung Ventures, Hyundai Motor, Humax, Korea Investment Partners, TBT Partners, and Magna Investment.

Qualisys AB

Booth No. 8	CEO	Ingemar Pettersson
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	Email	sales@qualisys.com
	Website	www.qualisys.com
	Contents of Exhibit	Motion capture system

Introduction

Qualisys, from Sweden, is a leading precision motion capture and 3D positioning tracking system provider. With a +30 years-long history of supplying a variety of industries with high-end camera systems and expertise. Indoor, outdoor, ground-to-air, or underwater – no matter what condition, we have your solution.
Our system provides high-precision 3D and 6DOF ground truth data for controlling and developing unmanned aerial vehicles, robotics, and other autonomous machines.

- High-accuracy and high-speed ground-truth data
- Real-time 6DOF tracking & streaming
- Large volume coverage
- Resolution up to 26 MP
- Real-time latency down to 3ms
- Indoor, outdoor & underwater tracking
- Daisy-chained camera connection
- Passive & active marker support

Hanyang University Global Human Resource Development for Innovative Design in Robot and Engineering

Global Human Resource Development for Innovative Design in Robot and Engineering	**President**	Joongmoo Byun
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	Email	jyk2003@hanyang.ac.kr
	Website	https://research.hanyang.ac.kr
	Contents of Exhibit	Recruiting Overseas Research Personnel

Introduction

LG Electronics Inc.

LG	**President**	Joowan Cho, Dooyong Bae
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	Website	https://www.lge.com/us

Introduction

LG CLOi

SMART ROBOT SOLUTIONS

LG Business Solutions

TWINNY

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Tel/Fax	+82 42.716.1558
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Contents of Exhibit	Autonomous Mobile Robot

Introduction

TWINNY provides one-stop solution for autonomous mobile robots and a corresponding platform. TWINNY has founded in 2015. Among total 159 employees, 32 of them are engineers graduated from KAIST, the MIT of Korea, with master's or doctoral degrees.
TWINNY's advanced technology enables the autonomous driving without any additional infrastructure in a wide indoor and outdoor environment such as factories, distribution centers, high-rise buildings, and parks. Holding 27 patents related to autonomous mobile robot technology, TWINNY solved the technical problems of existing robots, such as the difficulty in self-localization, the process of detection of obstacles, the real-time vector maps, and avoiding moving obstacles.

AIDIN ROBOTICS Inc.

AIDIN ROBOTICS	**President**	Lee, Yoon Haeng / Choi, Hyouk Ryeol
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	Email	info@aidinrobotics.co.kr
	Website	https://www.aidinrobotics.co.kr/
	Contents of Exhibit	6Axis force/torque sensor , torque sensor , field sensor

Introduction

AIDIN ROBOTICS Inc is a robot company that started from Robotics Innovation Laboratory in the Department of Mechanical Engineering at Sungkyunkwan University in South Korea. Our expertise lies in developing robotic system and AI-driven sensor technologies based on our Field Sensing technology, which we have been accumulating since 1995.
We possess the technology of capacitance type sensors using the fringe effect and can design and producing them.
A miniature 6-axis force/torque sensor measuring 15x10.5 mm (DxH) that can be used plug & play without additional devices.
A 6-axis force/torque sensor for precise operation and force control of industrial/collaborative robots.
ATS torque sensor is a sensor that extracts and measures only the rotational force in the direction of the axis from external forces consisting of 3-axis force and 3-axis moment.

Tesollo Inc.

TESOLLO	**President**	Young-Jin Kim
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	Tel/Fax	+82 2 6914 6620
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	Website	https://www.tesollo.com/
	Contents of Exhibit	Robotic hand, Gripper, Picking Automation (Bin Picking, Piece Picking, Palletizing)

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Bo, He WeET6.8
Bo, Li WeCT5.7
Boblan, Ivo WeCT7.7
Bodenhagen, Leon TuBT3.6
Bogliolo, Michela TuPO.51
WeBT3.2
Bolli, Roberto TuPO.19
Bolotnikova, Anastasia TuCT3.4
Bonial, Claire WeCT7.3
Bontula, Anisha TuBT3.2
Boos, Annika ThAT3.8
Bossema, Marianne TuET4.2
Boyea, Heath WeDT4.2
Breil, Valentin TuAT4.4
Brell-Cokcan, Sigrid WeAT6.6
Bresin, Roberto WeDT7.2
Brienza, Michele ThAT6.4
Britten, Nicholas TuAT1.3
Broz, Frank TuDT4.2
WeAT3.1
Bruno, Barbara TuET3.9
WeBT4.2
WeET5.1
Bryant, De'Aira TuBT1.5
Bu, Seongun TuPO.47
Buchmeier, Sean TuET1.3

burdet, etienne WeAT4.1
Burschka, Darius TuDT6.1
Burum, Krystian TuPO.34
Busch, Philip WeET5.2
Buschmeier, Hendrik WeCT6.4

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Cakmak, Maya WeCT1.2
Cameron, David TuPO.29
Campagna, Giulio WeET4.7
Canepa, Danilo ThAT3.6
Cangelosi, Angelo TuET1.7
TuET6.6
WeBT5.5
WeDT1.1
WeDT6.5
Cao, Yongpeng TuPO.2
Capsi Morales, Patricia WeBT6.2
Carfì, Alessandro WeAT1.3
Carnieto Tozadore, Daniel WeBT4.2
Carrasco-Martínez, Sara ThAT1.3
Carriero, Graziano ThAT6.4
Carter, Elizabeth TuET4.6
Casadio, Maura TuPO.51
WeBT3.2
ThAT3.6
Castaño Ocaña, Mario WeBT3.4
WeBT3.5
Castelo-Branco, Miguel TuAT6.5
Castri, Luca WeAT1.2
Castro González, Álvaro ThAT1.3
Castro-Malet, Manuel WeBT3.4
WeBT3.5
Cavalcante Lima, Bruno Gabriel ThAT6.1
Cavallo, Filippo TuAT6.5
Celiktutan, Oya TuBT4.3
Cesta, Amedeo WeAT1.1
Cezayirlioğlu, Melike WeBT4.2
Cha, Youngsu TuPO.20
Chadalavada, Ravi Teja TuBT4.2
Chae, Sanghoon WeET7.2
Chakravarthi Kumaran, Srivatsan TuBT4.1
Chambers, Jonathan WeCT1.5
Chamoto, Yuki TuDT4.4
Chan, Chui Yi TuDT1.4
Chan, Hing Yi TuPO.8
Chan, Sum Yee TuDT1.4
chandra, shruti ThAT1.6
Chen, Chaona ThAT5.1
Chen, Chu-Yin WeDT5.4
Chen, Hsin-Mei TuBT1.4
Chen, Jiasen WeBT3.8
CHEN, JINGYU WeET4.8
Cheng, Linlin WeBT4.4
Cheng, Xiaoxiao WeAT4.1
Chernova, Sonia WeET4.2
Chetouani, Mohamed TuCT6.1
Chew, Bryan Lijie WeBT3.8
Chi, Peng TuCT5.3
Chi, Vivienne Bihe WeAT5.5
ThAT5.2
Chiacchio, Pasquale ThAT6.1
Chiba, Yuya WeCT6.6
Chierici, Alberto WeCT5.1
Cho, Duk Youn TuPO.14
Cho, SungJoon TuCT3.3
Choi, Jongsuk TuPO.12
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Choi, June-Seek TuPO.42
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Choi, Woojin WeCT1.4
Chowdhury, Aparajita WeET7.5
Chung, Chongyoung TuPO.17
Chung, Jae Hee WeAT3.4
Chung, Sewoong WeET4.6
Chupin, Thibaud TuBT6.3
Churamani, Nikhil WeBT5.7
Chuy, Oscar Jed WeET4.2
Ciardo, Francesca TuPO.31
Circu, Silvia Sorina WeDT5.4
Clark, Jediah WeBT4.5
Clodic, Aurélie ThAT5.8
Cocchella, Francesca TuPO.51
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Codd-Downey, Robert TuAT4.3
Cohen, Philip R ThAT4.2
Colan, Jacinto TuAT5.1
Collins, Sawyer WeCT1.1
Colombino, Tommaso TuPO.26
Conn, Andrew TuBT5.2
Cooney, Martin ThAT2.5
Cooper, Sara TuCT1.3
Cornelious, Rhys WeET6.4
Corujeira, Jessica TuBT6.3
Costanzo, Marco ThAT6.6
Coutinho, Altair TuPO.40
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Coyne, Adam K WeCT6.5
Crandall, David WeDT7.3
Croitoru, Madalina WeDT5.4
Cross, Emily S WeCT4.5
Cupec, Robert WeET6.5

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D'Angelo, Ilenia WeCT4.2
D'Errico, Lorenzo TuET1.1
Dahiya, Abhinav TuET5.1
Daniels, Sarah TuDT1.2
Dantam, Neil WeET7.3
Darlan, Daison WeDT6.2
Das, Dibyendu TuET6.3
Dasanayake, Nimantha TuBT3.4
Datey, Isha ThAT2.6
Datta, Ahana ThAT5.3
Dautenhahn, Kerstin TuCT4.2
TuET4.3
WeAT5.2
WeCT7.2
WeDT5.1
ThAT1.4
ThAT1.6
David, Klaus WeET5.2
de Graaf, Maartje WeAT3.1
de Luna, Xavier WeCT5.2
de Saille, Stevienna TuPO.29
De Tommaso, Davide TuPO.31
deGraft-Hanson, Christine Augusta Ekua WeBT3.1
Demir Kanik, Sumeyra Ummuhan TuCT6.3
Demiris, Yiannis WeET5.3
den Exter, Emiel TuBT6.3
Deng, Yiming TuET5.9
Dennler, Nathaniel TuAT4.5
Di Eugenio, Barbara TuDT3.4
Di Martino, Carmine WeDT1.5
Dias, Jorge TuAT6.5
Diddigi, Raghuram Bharadwaj TuCT4.4
Diehl, Inga TuAT4.4
Dillenbourg, Pierre WeBT4.2
WeET5.1
Dinc, Huseyin Tugcan ThAT6.2
Ding, Dan TuCT3.1
Ding, Mengyuan ThAT5.1
Dinkar, Tanvi TuPO.30
Dixon, Michael ThAT1.6
Do, Cao Danh TuBT5.7
Dominguez-Vidal, Jose Enrique WeCT7.4
Dondrup, Christian ThAT5.4
Dong, Zilong TuET6.5
Donnermann, Melissa TuCT4.3
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Doolan, Sharni WeCT1.3
Dossett, Benjamin TuET3.5
TuET3.8
Duda, Victoria WeDT4.3
Durán-Viñuelas, Ricardo WeBT3.4
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Dutta, Vibekananda WeBT4.8
Duval, Alexandre WeET7.6
Dzhoroev, Temirlan ThAT3.2

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Ebenhofer, Gerhard WeET4.1
Edan, Yael ThAT1.1
Eden, Jonathan WeAT4.1
Edlinger, Raimund TuET6.4
Edström, Filip WeCT5.2
Eiben, A.E. WeCT5.3
WeCT5.4
Eichler, Paul WeBT4.6
Eimler, Sabrina C. TuPO.1
Eitrheim, Maren TuCT1.2
Elbeleidy, Saad ThAT2.7
Elhajj, Imad WeET4.5
Elliott, Jeannette TuAT6.3
Emmermann, Birte ThAT3.8
Erdogmus, Deniz WeET6.1
Erel, Hadas TuBT4.1
Esfandiari, Mojtaba WeET7.7
Etiene, Tiago TuBT1.5
Eyssel, Friederike WeDT1.3

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Fachantidis, Nikolaos WeAT3.2
Fan, Kam Wah TuPO.8
Fan, Kevin TuCT4.2

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Fang, Hongyu TuET6.7
fang, shuai TuET6.2
Fang, Yu WeET5.5
Faroni, Marco WeET4.3
Fatloun, Mohamad Bassel WeCT5.7
Favier, Anthony TuET3.1
WeAT5.1
Feigh, Karen WeAT4.6
Fernandes, Alexandra TuCT1.2
Ferrentino, Enrico ThAT6.1
Fick, Jason WeDT7.2
Fischer, Joel WeET1.8
Fischer, Kerstin TuBT1.3
Fisher, Nathan WeCT1.5
Fitter, Naomi T. TuBT3.2
WeDT7.2
Flowers, Jared WeET4.3
Foix, Sergi WeET6.5
Fong, Terrence TuET4.6
Fontenot, Nicole TuBT1.4
Ford, Tamsin WeBT3.6
Forghani, Delara TuET4.3
Forlizzi, Jodi TuET4.6
Fowler, Allan ThAT4.3
Francesco, Zachary WeDT5.1
Francesconi, Enrico ThAT2.2
Frank, Lily WeET1.5
Frazier, Chelsea TuET3.4
Frese, Udo WeET6.7
Fu, Di TuAT4.2
WeCT4.4
Fu, Hanxiao TuBT1.1
Fujii, Ayaka WeDT6.1
ThAT3.5
Fujita, Wataru ThAT1.7
Fukuchi, Yosuke WeET1.7
Fukumori, Kosuke TuAT3.6
Furmanek, Mariusz Pawel WeET6.1
Furusawa, Minori TuPO.27
Furuya, Yuki TuDT4.3

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Galata, Aphrodite TuET6.6
Galatolo, Alessio WeCT6.3
Galiza Cerdeira Gonzalez, Antonio TuDT6.2
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Gallhuber, Katja WeET4.1
Gallo, Danilo TuPO.26
Gallou, Jorand TuET5.2
Galvez Trigo, Maria Jose WeET1.8
Ganal, Elisabeth TuET4.5
Gandhi, Vineet TuCT5.1
Gao, Mingyue TuPO.50
Gao, Run Ze WeET6.4
Garcia, Gonzalo A. WeBT3.4
WeBT3.5
Garcia Goo, Hideki ThAT2.4
Garrell, Anais TuDT5.4
Garrote, Luís Carlos TuET5.8
Gasparri, Andrea TuET5.2
Gassen, Martina TuBT6.1
Gasteiger, Norina TuET1.7
Gaudino, Alessandro TuET5.3
Gehlbach, Peter WeET7.7
Geiskkovitch, Denise Y. WeBT1.6
Gerken, Jens WeET6.7
Ghafurian, Moojan TuET4.3
Ghazali, Aimi Shazwani WeCT4.6
Ghose, Debasish TuET6.3
WeBT6.6
Gilbert, Alia ThAT1.2
Gim, Kevin TuBT5.1
Girishan Prabhu, Vishnunarayan WeAT4.3
Giuliani, Manuel ThAT5.7
Giunchiglia, Enrico WeCT4.2
Glas, Dylan F. TuAT1.5
TuBT1.1
TuBT1.5
Golchinfar, David TuBT6.6
Goldau, Felix Ferdinand WeET6.7
Gomez, Randy WeBT3.4
WeBT3.5
WeET5.5
Gong, Jiayong ThAT4.3
Gopura, R.A.R.C. TuBT3.4
Goto, Yuta WeAT6.4
Gouko, Manabu TuPO.3
Govindaraju, Aswathaman WeBT6.5
Grant, Janie Busby WeCT1.3
Grassi, Lucrezia ThAT3.6
Grasso, Maria Antonietta TuPO.7
Gregory, Jason M. TuBT1.2
Grimm, Cindy WeET5.4
Grishko, Andrey TuBT4.1
Grisolia, Mariantonietta ThAT6.4
Groechel, Thomas ThAT4.1
Grondin, Francois WeDT4.3
Grosso, Veronica ThAT4.7
Gu, Kairui TuDT5.2
Gu, Yue TuCT6.2
Guerdan, Luke WeBT5.1
Guglielmi, Vito ThAT6.4
Gunes, Hatice TuBT4.5
WeBT3.6
WeBT5.1
WeBT5.7
Guo, Ao WeCT6.6
Guo, Yijie TuAT5.3
TuBT5.4
TuPO.50
Guo, Yixiang TuAT6.3
Gupta, Satyandra K. TuBT1.2
WeET6.3
Gupte, Vivek ThAT1.1
Gustafson, Joakim TuBT4.4
Gutierrez Torres, Brenda Scarleth WeCT4.4
Gutzeit, Lisa WeDT5.5

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Ha, Seongmin WeBT5.2
Habash, Nizar WeCT5.1
Haddadin, Sami TuET3.7
WeET7.1
Hafner, Verena Vanessa TuET3.6
WeET1.4
Hagimori, Daiki TuBT5.3
Hagiwara, Yoshinobu ThAT5.5
Hahn, Sowon TuPO.23
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ThAT3.7
Hakanen, Taru TuAT6.2
Hald, Kasper WeAT4.5
Halim, Jayanto WeBT4.6
Ham, Seoyeon WeBT5.2
Hamlin, Shannan TuBT1.4
Hammond III, Frank L. TuBT3.1
TuCT3.2
ThAT1.5
Han, Jaeseung TuPO.35
Han, Yuan TuPO.49
Hang, Chenlin WeET1.2
Hanheide, Marc WeAT1.2
Hara, Masayuki WeAT6.4
Haring, Kerstin Sophie TuAT1.2
TuET3.5
TuET3.8
Harrison, Matthew TuDT1.2
Hasan, Hadi WeET4.5
Hasegawa, Shoichi ThAT5.5
Hasegawa, Yasuhisa TuAT5.1
Hassan, Mohammad Mehedi TuET6.9
Hastie, Helen WeBT1.4
WeDT5.2
ThAT5.4
Hayashi, Kotaro WeAT5.3
Haynes, John-Dylan TuET3.6
He, Xin WeBT4.8
Heard, Jamison WeBT5.3
Hei, Xiaoxuan ThAT4.5
Heinisch, Judith Simone WeET5.2
Heisler, Marcel WeCT6.8
Helgert, Andrè TuAT4.4
Hellou, Mehdi TuET1.7
WeDT1.1
Hellström, Thomas WeCT5.2
Henkel, Kenna Baugus WeCT1.1
Henkel, Zachary WeCT1.1
Hennekeuser, Darius TuBT6.6
Herath, Damith Chandana WeCT1.3
Heredia, Juan WeAT6.5
Herzog, Olivia TuET3.7
Hiatt, Laura M. TuAT1.1
Hidaka, Shun TuAT3.6
TuPO.11
Higashinaka, Ryuichiro WeCT6.6
Hildebrand, Kristian WeCT7.7
Hindriks, Koen WeBT4.4
WeCT5.3
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WeDT7.5
Hirai, Ryu WeCT6.6
Hirano, Ryohei WeAT4.4
Hitzmann, Arne TuBT4.6
Hoey, Jesse WeAT5.2
Holthaus, Patrick WeAT3.6

WeBT3.1
WeDT5.1
Hong, Jooyoung TuBT5.1
Hong, Kihun TuAT6.6
Hong, Woolim TuDT3.2
Hongyu, Mao WeAT6.1
Honkote, Vinayak TuET6.3
Hopko, Sarah WeBT4.1
Horrocks, Sophie TuDT1.2
Hossain, Khadeejah ThAT2.6
Hou, Muhan WeCT5.3
WeCT5.4
Howard, Ayanna TuBT1.5
Howard, David ThAT5.6
Howes, Christine WeET5.6
Hsiao-Wecksler, Elizabeth TuAT6.3
Hsiao-Wecksler, Elizabeth T. TuCT6.4
Hsu, Long-Jing WeDT7.3
Hu, Jun WeBT3.3
Hu, Wenfei TuET6.2
TuET6.7
WeBT5.4
Hu, Zhe TuAT3.5
Huang, Nathan TuDT1.1
Huang, Shouren TuPO.2
Huang, Yuan TuDT5.2
Hudson, Taylor WeCT7.3
Huff, Markus TuPO.9
Hunt, William TuCT6.2
WeBT4.5
Hur, Pilwon TuDT3.2
Hwang, Geonwoo TuPO.15
Hyde, Martin WeET5.7
Hyde, Richard WeET1.8
Hyeon, Kyujin TuPO.17

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Ichikawa, Jun TuAT3.1
Ichikura, Aiko WeCT4.3
WeDT6.3
Idrees, Ifrah TuAT1.5
Iguchi, Takumi WeDT6.6
Ihlenfeldt, Steffen WeBT4.6
Ihn, Yong Seok TuCT3.3
Iimori, Masato TuDT4.3
Ijspeert, Auke TuCT3.4
IJsselsteijn, Wijnand WeET1.5
Ikeda, Markus WeET4.1
Ikoma, Hibiki WeET1.3
Imai, Atsuhiro TuAT6.1
Imaizumi, Taku WeET1.6
Imbiriba, Tales WeET6.1
Imran, Ali TuBT1.6
Inaba, Masayuki WeCT4.3
WeDT6.3
ThAT3.5
Inagaki, Tetsuya TuET5.4
Indurkhya, Bipin WeBT3.7
WeCT4.8
Inoue, Koji TuAT3.6
Iordachita, Ioan Iulian WeET7.7
Ipek, Goktan ThAT4.1
ISHII, Hiroyuki TuAT5.7
Ishikawa, Masatoshi TuPO.2
Ishizumi, Nagisa TuPO.3
Isoyama, Naoya TuBT5.3
Issa, Mohamad WeBT6.2
Itakura, Riichi TuET5.4
Ito, Keiya TuBT5.5
Ito, Norihiko TuBT5.5
Itoyama, Katsutoshi TuAT4.6
Ivanova, Ekaterina WeAT4.1
Izquierdo-Badiola, Silvia WeDT1.2

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Jaehwi, Jang WeCT1.4
Jahn, Georg TuPO.9
Jain, Kanishk TuCT5.1
Jamil, Babar TuPO.43
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Jatavallabhula, Krishna Murthy TuCT5.1
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Jenkin, Michael TuAT4.3
Jenkins, Odest Chadwicke ThAT1.2
Jenkinson, George TuBT5.2
Jensfelt, Patric WeBT6.1
Jeon, Eunjeong TuPO.22
Jeong, Ji Hoon TuPO.42
Jeong-in, Kim TuPO.6
Jiang, Zhuoqun WeBT3.8
Jihwan, Park TuPO.6
Jin, Sangrok WeCT5.6
Jin, Zhi WeDT4.6
Jinwoo, Park TuET4.9
Jo, Bruce TuAT3.4
Jo, Kyeong Im TuPO.42
JOHAL, Wafa TuBT6.5
Johnson, Aaron M. ThAT2.8
Jokinen, Kristiina WeBT1.5
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Jones, Peter B. WeBT3.6
Jørgensen, Jonas TuBT5.7
Joshi, Swapna TuAT1.3
TuAT1.4
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Jouaiti, Melanie TuCT4.2
WeAT5.2
Ju, Celinna TuCT3.4
Julia, Berger WeCT6.2
Jung, Dawoon TuPO.47
Jung, Malte TuCT4.1
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Kaarstad, Magnhild TuCT1.2
Kaipainen, Kirsikka ThAT4.4
Kaiser, Felix TuBT6.1
Kajiwara, Takumi ThAT1.7
Kala, Rahul TuET5.6
Kalatzis, Apostolos WeAT4.3
Kamino, Waki TuET4.8
WeDT7.3
Kanayama, Noriaki WeAT6.4
Kanazawa, Kotaro TuBT6.2
Kane Styler, Breelyn TuCT3.1
Kang, Dahyun TuET1.4
TuET1.8
ThAT1.8
Kang, Gyuyi TuPO.23
Kang, Taewoong TuET4.9
Kang, Yuna TuPO.47
Kapoor, Aditya WeDT5.6
Kappas, Arvid WeCT4.5
Kara, Neval TuBT4.5
Karakosta, Anna WeAT3.2
Karumanchi, Sambhu Harimanas TuCT4.4
Karungaru, Stephen TuET6.9
WeBT6.3
Kästner, Linh TuDT5.1
TuET5.7
WeCT5.7
Kaszuba, Sara WeET4.4
Kaufmann, Vanessa TuET3.6
Kavraki, Lydia TuBT1.4
Kawaguchi, Asaki WeAT6.4
Kawahara, Tatsuya TuAT3.6
Kawaharazuka, Kento WeCT4.3
Kawasaki, Yosuke WeAT1.4
WeAT1.6
Kawashima, Kenji TuBT5.5
WeDT4.5
Kaya, Mertcan WeET6.6
Kelly, Erin TuCT3.2
ThAT1.5
Kemppi, Paul Mikael TuAT6.2
Kenye, Lhilo TuET5.6
Khalzaa, Khulan WeBT6.3
Khan, Nabeela Khanum TuAT4.6
Khanna, Parag TuCT6.3
WeCT6.7
WeCT7.1
Kheddar, Abderrahmane WeDT5.4
Khokhar, Arushi WeBT6.6
Khoo, Weslie WeDT7.3
Khorsandi, Niloufar TuET5.7
Kim, Boyoung TuPO.38
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Kim, Byounghern WeET7.2
ThAT3.2
Kim, Dohyun WeCT1.4
Kim, Dong-Hyun WeCT1.6
Kim, Dongyoon WeET7.2
Kim, Hojoon TuPO.20
Kim, Ji-Sung TuPO.28
Kim, Jihoon TuPO.15
Kim, Joohyung TuAT5.4
TuBT5.1
Kim, Joonhyun WeBT5.2
Kim, Joonyoung TuET4.9
Kim, Jun San TuET1.8
Kim, Jun-Sik TuCT3.3
Kim, KangGeon TuCT3.3
Kim, Kyekyung TuET1.5
Kim, Minhyo WeCT5.6

Kim, Mun Sang TuCT5.4
KIM, ONYOO TuPO.14
Kim, Sangmin TuET1.4
Kim, Seongcheol WeCT1.1
Kim, SunKyoung TuPO.22
Kim, Uikyum TuPO.47
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Kim, Wansoo WeBT5.2
Kim, Won Shik TuET1.5
Kim, Yeseung WeCT1.4
Kimata, Akihito WeAT4.4
Kirabo, Lynn TuET4.6
Kirchhoff, Jérôme WeET5.2
Kirchner, Frank WeDT5.5
Kirtay, Murat WeET1.4
Kiyokawa, Kiyoshi TuBT5.3
Kjellstrom, Hedvig TuET6.1
Kmiecik, Jacek TuET5.7
Knight, Heather TuET1.3
Ko, KwangEun TuET1.9
Ko, Kyung Min WeCT5.5
Koay, Kheng Lee WeDT1.6
Kobuki, Sota TuAT3.6
TuPO.11
Kochenborger Duarte, Eduardo ThAT2.5
Koert, Dorothea TuBT6.1
TuDT3.1
Koh, Hong Pin WeBT3.8
Köhler, Lena ThAT3.1
Koike, Hideki TuBT3.3
Kolb, Jack WeAT4.6
Kondo, Kenshin WeDT4.5
Konno, Atsushi WeCT7.5
Kopp, Stefan WeCT6.8
Korman, Joanna TuPO.38
Kosaki, Sosuke WeAT6.2
Kozima, Hideki WeAT3.3
Kragic, Danica TuCT6.3
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Kraus, Matthias TuET3.3
Krishna, Madhava TuCT5.1
ThAT5.3
Kronhardt, Kirill WeET6.7
Krueger, Thomas TuBT6.3
Krusche, Sebastian WeBT4.6
Kubota, Naoyuki ThAT3.3
Kuch, Johanna Magdalena WeDT7.4
Kuchenbecker, Katherine J. WeDT1.4
Kuhlen, Anna TuET3.6
Kühnlenz, Barbara WeBT4.7
Kühnlenz, Kolja WeBT4.7
WeET6.6
Kulic, Dana ThAT4.2
ThAT5.6
kulkarni, Vaishnavi TuAT5.5
Kunneman, Florian WeDT7.5
Kuroda, Yoshihiro TuBT5.3
Kwak, Sonya Sona TuET1.4
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Kwak, Yoon Joung WeET7.2
Kweon, Andy TuET1.7
Kyung, Ki-Uk TuPO.15
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Labinjo, Temitope TuPO.29
Lachenmaier, Clara WeCT6.4
Lacroix, Dimitri WeDT1.3
Laeng, Bruno TuET1.6
Lafdili, Myriem WeCT4.4
Lagerstedt, Erik TuAT4.5
TuET3.2
Lagomarsino, Marta WeAT1.5
Laity, Weston TuET3.5
TuET3.8
Lakatos, Gabriella WeAT3.6
WeBT3.1
Lakshmanan, Manojkumar WeBT6.5
Lalitharatne, Thilina Dulantha TuBT3.4
Lamb, Maurice TuET3.2
Lambrecht, Jens TuDT5.1
TuET5.7
WeCT5.7
Lamon, Edoardo WeAT1.5
Lamptey, Moesha TuDT1.2
Lancaster, Eli TuBT1.2
Landolfi, Lorenzo WeCT7.6
Lange, Anna L. WeET1.4
Lastrico, Linda TuPO.51
WeBT3.2
Laus, Francesco ThAT6.4
Law, Edith ThAT4.2
LAW, Wing Ting TuPO.8
Lawrence, Steven WeAT5.2
Le Maguer, Sébastien WeDT6.5
Lee, Dagyeong TuPO.26
Lee, Dong-Wook TuET1.9
Lee, Hee Rin TuET5.9
Lee, Hee-hyol TuDT5.2
Lee, Hui Sung WeET7.2
ThAT3.2
Lee, Hyung Joo WeAT6.6
Lee, Jae-Hun WeCT1.6
Lee, Jaeryoung TuPO.21
TuPO.22
Lee, Jaeyeon WeCT1.5
Lee, Jangwon TuPO.32
Lee, Jin Joo TuBT1.1
Lee, Jinha TuAT3.4
Lee, Jinjae WeCT1.1
Lee, Jiyeon ThAT3.2
LEE, Jun Min TuPO.14
Lee, Kwang-Hyun ThAT6.2
Lee, Min Hyeok TuPO.20
Lee, Minha WeET1.5
Lee, Myungeun TuPO.34
Lee, Peter Seungjune WeET6.4
Lee, Sanghyub John TuET1.2
Lee, Seonghee TuAT1.3
Lee, Wen-Ying TuCT4.1
Lee, Yisoo TuCT3.3
Lee, Yoon Kyung TuPO.23
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Lein, Martina TuPO.18
Leite, Iolanda TuAT4.5
WeCT6.3
WeCT6.7
WeDT6.5
WeDT7.2
ThAT2.1
Lemaignan, Séverin TuCT1.3
ThAT5.7
Leonard, Pauline WeET1.8
Leotta, Francesco WeET4.4
Létourneau, Dominic WeAT5.4
Levinson, Leigh WeBT3.4
WeBT3.5
Li, Chih-Heng TuBT5.4
Li, Jing WeBT3.3
LI, Ki Sing TuPO.8
Li, Meng TuET6.5
Li, Min WeET6.8
Li, Monica, Mengqi TuBT1.6
Li, Sihui WeET7.3
Li, Siyu TuDT3.4
Li, Xiaoling WeET6.8
Li, Yanzhe WeAT3.1
Li, Yue WeDT7.5
Liao, Haipeng TuCT5.3
Lieng, Michelle TuAT5.2
Lilienthal, Achim J. TuBT4.2
Lim, JongYoon TuET1.2
TuET1.7
LIM, JUNG EUN TuPO.14
Lim, Meiyii WeDT5.2
Lim, Sein TuPO.15
Lim, Wansu TuPO.6
Lim, Yoongu TuET1.9
Lim, Yoonseob TuPO.39
TuET1.8
Lima, Bryanna TuBT3.1
Lin, Weikai TuET6.7
Linden, Katharina Friederike TuPO.36
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Lingg, Nico WeET5.3
Liou, Yan-Bo WeDT4.4
Lippi, Martina TuET5.2
Litchfield, Vicky WeAT3.6
Liu, Baisong TuAT3.2
TuET4.4
Liu, Carson Yu TuBT6.5
Liu, Jingyang WeAT6.1
Liu, Siwen WeDT4.6
Liu, Yen-Chen WeDT4.4
Liu, Yongming TuET5.9
LO, kwok wai TuPO.8
Lockwood, Kyle WeET6.1
López González de Quevedo, Marta Julia WeBT3.4
WeBT3.5
Lorentz, Viktor WeCT7.7
Lott, Vilja TuDT3.1

Louie, Wing-Yue Geoffrey TuDT1.1
ThAT2.6
Love, Rachel ThAT4.2
Lu, Kelly WeET6.4
Lu, Shuang WeCT6.2
Lu, Weifeng TuAT3.5
Lu, Yao TuPO.50
Lubitz, Adrian WeDT5.5
Lugrin, Birgit TuCT4.3
TuPO.18
TuET4.5
Luis Gonzales Miranda, Luis WeDT5.3
Lukin, Stephanie WeCT7.3
Lumer, Eleonore WeCT6.4
Luo, Dingsheng TuET6.2
TuET6.7
WeBT5.4
WeCT5.9
Luo, Haozheng TuBT5.6
Luo, jingjing TuPO.49
LUO, SHAN WeDT4.4
Luo, Zening TuBT5.6
Luz, Rute TuBT6.3
Ly, Karen ThAT4.1

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Ma, Ruidong WeET4.8
Maalouf, Noel WeET4.5
Macciò, Simone WeAT1.3
MacDonald, Bruce TuET1.7
Madera, Jonathan WeDT4.2
Maehigashi, Akihiro WeET1.7
Magnusson, Martin TuBT4.2
Mahale, Gopalkrishna TuAT5.5
Maheux, Marc-Antoine WeAT5.4
Mainprice, Jim WeBT6.7
Maior, Horia Alexandru WeET1.8
Majditehran, Houriyeh ThAT1.5
Majewicz Fey, Ann TuBT6.4
WeDT4.2
Majima, Soichiro TuAT6.4
Malfaz, Maria ThAT1.3
Malla, Dipawoli TuDT1.3
Malle, Bertram WeAT5.5
ThAT5.2
Mallipeddi, Rammohan WeDT6.2
Mamo, Robel TuET3.5
TuET3.8
Manoonpong, Poramate TuBT5.7
Manso, Luis J. WeDT5.6
Manyar, Omey Mohan WeET6.3
Marin, Nadja TuAT6.3
TuCT6.4
Marino, Alessandro TuET5.2
Markert, Timo TuDT6.1
Markopoulos, Panos TuAT3.2
TuET4.4
ThAT4.4
Maroto-Gómez, Marcos ThAT1.3
Marques Villarroya, Sara ThAT1.3
Martin, Lee WeCT1.3
Masooda, Bashir WeBT6.4
Massone, Antonino ThAT3.6
Mastrogiovanni, Fulvio WeAT1.3
Matarese, Marco WeCT6.1
Mataric, Maja ThAT4.1
Mathur, Aditya TuCT5.1
Mathur, Dhruv TuBT5.1
Matich, Sebastian TuDT6.1
Matsumaru, Takafumi WeBT4.8
Matsumura, Kohei TuDT4.4
WeET5.8
Maure, Romain TuET3.9
MCCURRY, J. MALCOLM TuET3.4
McGinn, Conor WeCT6.5
Md Yusof, Hazlina WeCT4.6
Meara, Mark O WeAT4.1
Megidish, Benny TuBT4.1
Mehri Shervedani, Afagh TuDT3.4
Mehta, Jainish WeDT5.1
Mehta, Ranjana WeBT4.1
Melchior, Frank WeDT7.4
Melsion, Gaspar Isaac ThAT2.1
Menezes, Paulo TuAT6.5
Meng, Fanle WeDT4.1
Merino, Luis WeET5.5
Merlo, Elena WeAT1.5
Metzler, Frederic TuBT6.1
Meusel, Marvin TuDT5.1
Mghames, Sariah WeAT1.2
Mi, Haipeng TuAT5.3
TuBT5.4
TuPO.50
Miao, Xin TuPO.25
Michaelis, Joseph ThAT4.7
Michaud, Francois WeAT5.4
Michaud, Simon WeDT4.3
Mikkel, Kjærgaard TuPO.2
WeAT6.5
Min, Jiyong TuPO.20
Minami, Kota WeAT5.3
Minamizawa, Kouta ThAT6.5
Miniotaite, Jura TuBT4.4
Minker, Wolfgang TuET3.3
Misaki, Daigo TuAT6.1
WeBT6.8
Mitrevski, Alex ThAT4.6
Mitsui, Yuya WeET5.8
Miura, Jun WeAT5.3
Miyazaki, Tetsuro TuBT5.5
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Mo, Tiande TuPO.8
Moder, Martin TuCT5.2
Moffett, Benjamin WeDT4.3
Moghadam, Peyman ThAT5.6
MOHAMAD, SHAABAN WeAT1.3
Mohammadi, Gelareh TuBT6.5
Molina, Alicia ThAT1.5
Mon-Williams, Ruaridh TuET6.8
Monaikul, Natawut TuDT3.4
Monis, Aaron TuCT5.1
Moon, Chaerim TuAT5.4
Moradbakhti, Laura TuDT3.3
Morel, Aurélien TuCT3.4
Morillo-Mendez, Lucas TuBT4.2
Morita, Yoshifumi TuBT6.2
Morocutti, Lorenzo WeCT4.2
Moros, Sílvia WeAT3.6
WeBT3.1
Morrison, Val WeCT4.5
Morschheuser, Benedikt ThAT3.1
Mott, Terran WeAT5.6
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Moujahid, Meriam TuPO.30
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Mousavi, Mohammad Reza WeBT3.1
Mouton, Baptiste TuPO.26
Mukuno, Haruto WeBT6.8
Müller, Ana TuPO.45
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Muly, Emil TuAT5.2
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Nagata, Shinichi TuET4.8
Nagatomo, Eri TuBT3.3
Naheem, Khawar TuCT5.4
Naiseh, Mohammad WeBT4.5
Nakadai, Kazuhiro TuAT4.6
WeDT7.1
Nakagawa, Hikaru ThAT5.5
NAKAGAWA, YURI WeDT6.6
Nakajima, Hirofumi WeDT7.1
Nakamura, Sousuke WeAT6.2
Nakane, Aoi WeDT6.3
Nakanishi, Junya TuDT4.4
WeET5.8
Nakaoka, Shintaro WeAT1.4
Nam, Yoonho WeCT1.6
Nantareekurn, Worameth TuBT5.7
Nanwani, Laksh TuCT5.1
Nardelli, Alice WeCT4.7
Nardelli, Alice WeCT7.6
Nardi, Daniele WeET4.4
Nasir, Jauwairia WeET5.1
Nasrat, Shady TuET4.9
Natale, Ciro ThAT6.6
Neef, Caterina TuPO.36
ThAT4.8
Neerincx, Anouk WeAT3.1
Neerincx, Mark WeAT3.1
Nehaniv, Chrystopher TuET4.3
WeAT5.2
WeDT5.1
ThAT1.4
Nertinger, Simone TuET3.7
WeET7.1

Nesset, Birthe TuPO.30
WeBT1.4
Nicola, Giorgio ThAT6.3
Niitsuma, Mihoko TuPO.41
Nishi, Hiroko TuAT5.7
Nomura, Tatsuya WeBT4.3
Noormohammadi-Asl, Ali WeCT7.2
Nuechter, Andreas TuET6.4
Nunes, Urbano J. TuET5.8

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Oberlender, Agam TuBT4.1
Obinata, Yoshiki WeCT4.3
Obo, Takenori ThAT3.3
Oezgan, Fatih TuCT5.2
Oh, Jiyeong WeCT1.1
Oh, Yoojin WeBT6.7
Ohashi, Atsumoto WeCT6.6
Ohnishi, Fumiya WeAT1.6
Ojo, Fayokemi WeDT1.4
Okada, Hiroyuki WeAT6.2
Okada, Kei WeCT4.3
WeDT6.3
ThAT3.5
Okafuji, Yuki TuDT4.4
WeET5.8
Okamoto, Shogo WeAT6.4
Okazaki, Shintaro TuBT4.3
Okubo, Ryu TuCT6.4
Oleinikov, Artemiy WeET6.2
Olson, Elizabeth ThAT1.2
Ono, Tetsuo WeET1.1
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Oralbayeva, Nurziya WeAT3.5
Orlandini, Andrea WeAT1.1
Orthmann, Bastian WeDT7.2
Osawa, Hirotaka TuPO.27
Otake-Matsuura, Mihoko TuAT3.6
Oyama, Akira ThAT5.5
Oyama, Eimei WeAT6.2
Oyekan, John Oluwagbemiga WeET4.8
Oztop, Erhan TuET5.5
WeET1.4

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Paas, Anita WeET7.6
Paas, Leo TuET1.2
Padir, Taskin WeET6.1
Pagilla, Prabhakar Reddy WeBT4.1
Pajalic, Zada TuCT1.1
Palermo, Giuseppina ThAT6.4
Palmieri, Jozsef TuET5.2
Pan, Jia TuAT3.5
Pandya, Aryaman TuAT1.3
Paneri, Serena TuET5.3
Papathanasiou, Angeliki TuBT5.2
Paplu, Sarwar ThAT3.4
Pardomuan, Jefferson TuBT3.3
Pariasca, Franco WeDT5.3
Paris, Cecile ThAT5.6
Park, Chung Hyuk TuPO.34
Park, Daehyung WeCT1.4
Park, Haeun ThAT3.2
Park, Inha TuPO.4
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Park, Jihwan TuPO.35
Park, Jisun TuPO.7
Park, Seong-Su ThAT6.2
Park, Yong-Ha TuPO.24
Parque, Victor WeDT6.2
Parreira, Maria Teresa TuPO.44
Pasalidou, Christina WeAT3.2
Pascher, Max WeET6.7
Pasquali, Dario WeCT7.6
Passy, Jean-Claude WeBT6.7
Pate, Seth WeBT5.6
Pathak, Sarthak TuAT6.4
Patil, Vaidehi TuAT1.3
Pauli, Josef TuCT5.2
Pavlic, Marko TuDT6.1
Pedrocchi, Nicola WeET4.3
ThAT6.3
Peel, Justin WeCT1.5
Pejic, Petra WeET6.5
Peng, Kaiping TuPO.25
Pepper, Cecily WeET1.8
Perdiz, João TuET5.8
Pereira, Aaron TuBT6.3
Pereira, Andre TuBT4.4
WeBT6.1
Pérez, Guillermo WeBT3.4
WeBT3.5
Perusquia-Hernandez, Monica TuBT5.3
Phillips, Elizabeth ThAT2.3
Piatt, Jennifer WeCT1.1
Piazza, Cristina WeBT6.2
Pierri, Francesco ThAT6.4
Pieters, Roel S. WeET7.5
Pischedda, Doris TuET3.6
Pitt, Alex ThAT5.6
Pittman, Daniel TuET3.5
TuET3.8
Plaat, Aske TuET4.2
Plöger, Paul G. ThAT4.6
Pollard, Kimberly WeCT7.3
Ponto, Noah WeCT1.2
Porfirio, David TuAT1.1
Potinteu, Andreea Elena TuPO.9
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Prabhakar, Raghav TuCT5.1
Pradalier, Cedric WeAT4.2
Prasad, Vignesh TuBT6.1
Prescher, Erik TuBT6.1
Price, Dominic James WeET1.8
Prinz, Theresa TuPO.33
Probst, Malte WeAT4.4
Pryor, Mitchell TuBT6.4
Puente, Karina TuBT3.2
Puphal, Tim WeAT4.4
Purayath, Aparna WeBT6.5
Purizaga Tordoya, Arturo WeDT5.3
Pusceddu, Giulia TuPO.51
WeBT3.2
Puthenkalam, Jaison WeET4.1

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Qian, Peizhu TuBT1.4
Quick, Ryan Racel TuBT3.2
Quintero-Peña, Carlos TuBT1.4
Quiroga, Natalia ThAT4.6
Quist, Ethan WeCT1.5

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R, Rathan TuAT5.5
R. Lima, Maria TuDT1.2
Rabaey, Jan M. TuCT3.4
Radice, Marta TuPO.31
Rafsanjani, Ahmad TuBT5.7
Raggioli, Luca WeBT5.5
Rajabi, Nona TuCT6.3
Rajendran, Gnanathusharan WeBT1.4
Ramchurn, Sarvapali WeBT4.5
Ramesh, Dev ThAT5.2
Ramos, Joao TuAT6.3
TuCT6.4
Ranaweera, Pubudu TuBT3.4
Randall, Natasha TuET4.8
WeDT7.3
Ranganeni, Vinitha WeCT1.2
Ranparia, Devsmit WeET6.3
Rashidan, Mohammad Ariff WeCT4.6
Rasouli, Samira TuET4.3
Ravichandar, Harish WeET4.2
Rea, Francesco TuPO.51
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Rebello, Keith TuDT4.2
Recchiuto, Carmine Tommaso TuET5.3
WeCT4.2
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ThAT3.6
Reddy, Elizabeth ThAT2.7
Reegård, Kine TuCT1.2
Regal, Frank TuBT6.4
Rehm, Matthias WeAT4.5
WeET4.7
Reig, Samantha TuET4.6
Reiner, Maximilian ThAT3.8
Ren, Carolyn WeET6.4
Repiso, Ely TuDT5.4
ThAT5.8
Reyes-Cruz, Gisela WeET1.8
Ricardo Sosa, Melo WeCT5.7
Richert, Anja TuPO.36
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WeCT5.8
ThAT4.8
Rieser, Verena TuPO.30
Rizzo, Carlos WeDT1.2
Robb, David A. WeDT5.2
ThAT5.4
Robert, Lionel TuET4.1
Roberts, Mark TuAT1.1
Robins, Ben WeAT3.6
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Rodrigue, Hugo TuPO.40
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Rodriguez, Laureano WeDT5.3
Rohrbeck, Kristin TuDT1.1
Roman, Kelly WeCT1.5
Romeo, Marta WeBT1.4
WeDT6.5
Ros, Raquel TuCT1.3
Rosen, Eric ThAT5.2
Rosén, Julia TuET3.2
Rosenthal-von der Pütten, Astrid Marieke WeCT4.1
Ross, Martin Keith TuDT4.2
Rossi, Alessandra WeBT1.2
WeDT1.5
WeDT1.6
Rossi, Silvia WeBT1.1
WeBT1.2
WeDT1.5
WeDT1.6
Rossin, Franziska TuCT4.3
Rothermel, Anna Milena WeCT4.1
Rothkopf, Constantin TuDT3.1
Rousso, Katelyn TuDT1.1
Rubagotti, Matteo WeET6.2
Rudenko, Andrey TuBT4.2
Rueda, Diana WeCT4.4
Ruijten, Peter WeET1.5
Ruiyang, Qin TuBT5.6
Rusli, Nazreen WeCT4.6
Russi, Nicola Severino TuPO.31
RYBAKOVA, ANASTASIYA TuPO.12
Ryu, HyungSeok TuDT3.2
Ryu, Jee-Hwan ThAT6.2
Ryu, Kanghyun WeCT1.6

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Sabanovic, Selma TuET4.8
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Sabbella, Sandeep Reddy WeET4.4
Sack, Michael TuPO.44
Sackl, Andreas WeET4.1
Saga, Tanya TuET4.8
Sahoo, Deepak Ranjan WeET5.7
Said, Nadia TuPO.9
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Saito, Daichi TuBT3.3
Sakaki, Taisuke TuPO.16
Sakamoto, Takafumi TuAT3.1
Salichs, Miguel A. ThAT1.3
Sanchez, Felix TuBT1.2
SANDULA, AJAY KUMAR WeBT6.6
Sandygulova, Anara WeAT3.5
WeET6.2
Sanfeliu, Alberto TuDT5.4
WeCT7.4
Saplacan, Diana TuCT1.1
TuET1.6
Sapra, Hritik WeET4.2
Sarda-Gou, Marina WeAT3.6
WeBT3.1
Sarkar, Meenakshi TuET6.3
Sarmonov, Shamil WeAT3.5
Sarthou, Guillaume ThAT5.8
Sasaki, Takuya TuBT5.3
Sato, Hiroki WeDT7.3
Sato, Noritaka TuBT6.2
Sætra, Henrik Skaug WeBT1.3
Satyev, Bekatan TuDT5.3
Saunders, Rob TuET4.2
Sayeed, Asad WeET5.6
Schaper, Marie-Monique WeBT3.7
Scherf, Lisa TuBT6.1
TuDT3.1
Schilp, Johannes WeCT6.2
Schlette, Christian WeAT6.5
Schlosser, Yann TuPO.30
Schmitt, Paul TuAT1.3
Schnapp, Benjamin David ThAT1.6
Schneiders, Eike TuCT4.1
Schober, Jonathan WeDT1.3
Schofield, Jonathon TuAT6.6
Schreiber, Dirk TuBT6.6
Schreiter, Tim TuBT4.2
Schroepfer, Pete WeAT4.2
Schulz, Trenton TuCT1.1
Sciutti, Alessandra TuPO.51
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Seaborn, Katie TuAT3.6
TuAT4.5
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Selvaggio, Mario ThAT6.6
Selvakumar, Keerthivasan WeBT6.5
Senaratne, Hashini Hiranya ThAT5.6
Senoo, Taku WeCT7.5
Seo, TaeWon TuPO.4
TuPO.5
Settelmayer, Lina TuAT4.4
Sevegnani, Michele TuCT6.2
Sgorbissa, Antonio TuET5.3
WeCT4.2
WeCT4.7
ThAT3.6
Shah, Jay WeBT4.1
Shahverdi, Pourya TuDT1.1
Sharma, Isha ThAT1.6
Shekhar, Shashank WeAT5.1
Shen, Weichao TuET6.5
Sheng, Zhe TuET6.5
Shi, Chang WeDT4.2
Shibata, Tomohiro ThAT1.7
Shido, Hiroki TuAT5.7
Shimokawa, Toshihiko TuPO.16
SHIN, BEONGJU TuPO.14
Shin, Dongbin WeBT5.2
Shin, Kazuki TuBT5.1
Shin, Minjung TuPO.24
Shin, Soomin ThAT1.8
Shin, Soyeon TuET1.8
Shiomi, Masahiro TuBT4.6
ThAT2.5
Shoji, Masaya ThAT3.3
Shrivastava, Anoushka ThAT2.8
Shukla, Rishabh WeET6.3
Sica, Arianna TuCT1.4
Sidek, Shahrul Naim WeCT4.6
Sikka, Pavan ThAT5.6
Sileo, Monica ThAT6.4
Silva, José Luís TuBT6.3
Sin Tung, Chan TuDT1.4
Sinclair, Jordan TuET3.5
TuET3.8
Singamaneni, Phani Teja TuET3.1
Singh, Saurav WeBT5.3
Singh, Siddharth TuAT1.5
Siol, Lenny TuET4.5
SIVA, SRIRAM WeET7.3
Sivaprakasam, Mohanasankar WeBT6.5
Sjaarda, Cameron WeET6.4
Smart, William TuBT1.5
Smith, Claes Christian TuCT6.3
WeCT6.7
WeCT7.1
Smith, Stephen L. TuET5.1
WeCT7.2
Sogabe, Maina TuBT5.5
WeDT4.5
Somashekarappa, Vidya WeET5.6
Song, Christina Soyoung TuAT3.4
SONG, INPYO TuPO.32
Song, Minjae WeCT1.4
Song, Minseok TuPO.48
Song, Seung Yun TuAT6.3
TuCT6.4
Song, Yang TuBT6.5
Soorati, Mohammad Divband TuCT6.2
WeBT4.5
Soper, Hunter ThAT2.6
Sørensen, Sune Lundø TuPO.2
Sorrentino, Alessandra TuAT6.5
Sousa Silva, Rafael TuAT5.2
Sowell, Ross T. WeET5.4
Spiegeler Castaneda, Theophil WeBT6.2
Spitale, Micol TuBT4.5
WeBT3.6
Sridharan, Mohan ThAT5.3
Srikantan, Maalavika TuAT5.5
Srivastava, Divya WeAT4.6
St-Onge, David TuBT1.6
WeET7.6
Staffa, Mariacarla TuET1.1
Stanley, Laura WeAT4.3
Stanojevic, Cedomir WeCT1.1
Stefanov, Dimitar TuPO.21
Steinbach, Eckehard WeDT4.1
WeDT4.6
Steinfeld, Aaron TuET4.6
Steinhaeusser, Sophia C. TuPO.18
Stevens, Gunnar TuBT6.6
Stouraitis, Theodoros TuET6.8

Stower, Rebecca WeBT6.1
ThAT2.1
Strahl, Erik WeCT4.4
Strait, Megan ThAT2.4
Straßmann, Carolin TuAT4.4
TuPO.1
Strenge, Garrit WeET6.1
Subramanian, Karpagavalli TuAT5.5
Suda, Taiga WeAT6.2
Sudo, Yui WeDT7.1
Sugaya, Midori WeDT6.6
Suissa, Dan Rouven ThAT1.1
Sumioka, Hidenobu TuBT4.6
Sun, Qirui TuAT5.3
TuPO.50
Surendran, Vidullan TuAT4.1
Sutherland, Craig ThAT4.3
Suzuki, Hyuga ThAT6.5
Suzuki, Kaoru WeDT6.6
Swamy, Sushant WeDT5.6
Szekely, Eva TuAT4.5
TuBT4.4
Šimundić, Valentin WeET6.5

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Tabone, Wilbert TuAT1.3
Taibi, Davide WeET7.5
Takagi, Karebu TuAT3.1
Takahashi, Kohske WeET1.6
Takahashi, Masaki WeAT1.4
WeAT1.6
Takashio, Kazunori TuDT4.3
Takeuchi, Yugo TuAT3.1
WeET1.3
Takigahira, Masayuki WeDT7.1
Talbot, Fletcher ThAT5.6
Taliaronak, Volha WeET1.4
Tamura, Kazuhiro TuAT3.6
Tan, Sihan TuAT4.6
Tan, Xiang Zhi WeET4.2
Tan, Xiaobo TuET5.9
Tanaka, Fumihide TuBT5.4
Tanaka, Yoshihiro ThAT6.5
Tang, Jie TuPO.25
Tang, Liang WeBT6.4
Taniguchi, Akira ThAT5.5
Taniguchi, Tadahiro ThAT5.5
Tapia Rousiouk, Ana WeDT4.3
Tapus, Adriana ThAT4.5
ThAT5.1
Tarkany, Rayane TuPO.30
Tavella, Federico TuET6.6
Taylor, Sean TuBT5.1
Telisheva, Zhansaule WeAT3.5
Teoh, Jia Yuan TuPO.34
Terada, Kenji TuET6.9
WeBT6.3
Terzioglu, Yunus TuDT4.2
Tetteroo, Daniel TuAT3.2
TuET4.4
Thill, Serge WeET5.5
Tian, Jiyu TuCT5.3
Tiemann, Karl TuBT5.2
Tochia, Chira WeET1.8
Toczek, Maisey TuET3.5
TuET3.8
Tokoi, Kohei WeAT6.2
Tokunaga, Seiki TuAT3.6
Tornbjerg Eriksen, Kristina TuBT3.6
Torre, Ilaria TuAT4.5
WeDT6.5
WeDT7.2
Torres, Kevin TuBT6.4
Torresen, Jim TuCT1.1
TuET1.6
Trafton, Greg TuET3.4
Train, Nicole TuET3.5
TuET3.8
Traum, David WeCT7.3
Trick, Susanne TuDT3.1
Trieu, Patrick TuAT6.6
Tripathi, Shikha TuAT5.5
Trovato, Gabriele WeDT5.3
Tscheligi, Manfred WeET4.1
Tsui, Kate TuET4.8
Tsui, Katherine WeDT7.3
Tsunomori, Yuiko WeCT6.6
Tsuru, Hideo WeDT7.1
Tu, Ruibo TuET6.1
Tunik, Eugene WeET6.1
Turi, Marco ThAT6.4
Tusseyeva, Inara WeET6.2
Tuyen, Nguyen Tan Viet TuBT4.3
Tzemanaki, Antonia TuBT5.2

U

Uchikawa, Otono TuPO.41
Uchiyama, Hideaki TuBT5.3
Ueda, Kazuhiro WeET1.6
Uimonen, Mikael Petro Juhana TuAT6.2
Umbrico, Alessandro WeAT1.1
Umeda, Kazunori TuAT6.4
Unde, Jayant TuAT5.1
Unhelkar, Vaibhav V. TuBT1.4
Usevitch, David WeET7.7
ushimi, nobuhiro TuPO.16

V

Vaananen, Kaisa TuBT3.5
WeET7.5
ThAT4.4
Vaidyanathan, Ravi TuDT1.2
van de Sande, Kelvin WeAT3.1
van Otterdijk, Maria Theodorus Henricus TuET1.6
Vasco, Miguel TuCT6.3
Vaziri, Daryoush TuBT6.6
Velentza, Anna Maria WeAT3.2
Velentza, Anna-Maria ThAT4.1
Vento, Mario ThAT6.1
VENTURA, Rodrigo TuBT6.3
Venture, Gentiane TuPO.11
Vidović, Ivan WeET6.5
Vigni, Francesco WeBT1.1
Vijayakumar, Sethu TuET6.8
Villagrossi, Enrico ThAT6.3
Vinanzi, Samuele WeDT1.1
Vinel, Alexey ThAT2.5
Von Kentzinsky, Hendrik TuAT3.3
von Stryk, Oskar WeET5.2
Voss, Clare WeCT7.3

W

Wagner, Alan Richard TuAT4.1
Wagner, Julia TuPO.10
Wagner, Marlene TuPO.33
Wang, Chenyang WeBT4.2
Wang, Eileen TuCT3.1
Wang, Fei TuPO.25
Wang, Hongbo TuPO.49
Wang, Jiawen WeCT5.9
Wang, Pinhao WeBT3.3
Wang, Ruhan TuBT5.4
Wang, Senbo TuET6.5
Wang, Siyang TuBT4.4
Wang, Yi TuET6.2
TuET6.7
WeBT5.4
WeCT5.9
Wang, Yixiao WeBT3.8
Wang, Zhenmin TuCT5.3
Wang, Zican WeDT4.1
WeDT4.6
Warren, Philippe WeAT5.4
Watson, Nicholas WeET1.8
Webb, Nicola ThAT5.7
Weber, Tom WeCT4.4
Weiss, Manuel WeCT7.7
Wen, Ruchen ThAT2.3
Wendt, Janine WeET5.2
Weng, Yueh-Hsuan ThAT2.2
WenXian, Li TuPO.49
Wenzel, Katharina Valeska TuET3.7
Wenzel, Raphael WeAT4.4
Wermter, Stefan TuAT4.2
WeCT4.4
West, Ruth WeET5.4
Wheaton, Lewis TuCT3.2
Wiens, Gloria WeET4.3
Wilcock, Graham WeBT1.5
Willamowski, Jutta TuPO.7
Williams, Jason ThAT5.6
Williams, Tom TuAT5.2
WeAT5.6
WeAT6.3
WeET7.3
WeET7.4
ThAT2.3
ThAT2.4
ThAT2.7
Wilson, Bruce W TuPO.30
WeDT5.2
Winkle, Katie TuDT3.3
TuPO.38
WeCT6.3
ThAT2.1
ThAT2.4
Wittie, Mike WeAT4.3

Wittmann, Maximilian ThAT3.1
Wong, Lawson L.S. WeBT5.6
Wood, Luke Jai WeAT3.6
WeBT3.1
Wozniak, Maciej Kazimierz WeBT6.1
Wróbel, Alicja WeBT3.7
Wu, Chia-Hsin TuBT3.5
WeET7.5
Wu, Xiangmiao TuCT5.3
Wudarczyk, Olga TuET3.6
Wullenkord, Ricarda WeDT1.3
Wykowska, Agnieszka TuPO.31

X

Xiao, Chenzhang TuAT6.3
TuCT6.4
Xie, Jun WeET6.8
Xiong, Mengchen WeDT4.1
xu, chenwei TuBT5.6
Xu, Guanghua WeET6.8
Xu, Kerui TuAT1.5
Xu, Mengwei TuCT6.2
Xu, Xiao WeDT4.1
WeDT4.6

Y

Yadav, Aakash WeBT4.1
Yadollahi, Elmira TuCT6.3
WeCT6.7
Yamada, Seiji WeET1.2
WeET1.7
Yamaguchi, Seiko Piotr TuET5.4
Yamakawa, Yuji TuPO.2
Yamamoto, Yudai TuPO.37
Yamasaki, Kakeru ThAT1.7
Yamsani, Sankalp TuAT5.4
TuBT5.1
Yanagisawa, Eito WeAT6.2
Yang, Dong WeDT4.1
WeDT4.6
Yang, SungPhil TuPO.14
Yang, Zhanshuo WeET6.8
Yanokura, Iori WeDT6.3
Yao, Zhihao TuAT5.3
TuPO.50
Yarossi, Mathew WeET6.1
Ye, Guo TuBT5.6
Ye, Meryl TuCT4.1
Ye, Xin TuET4.1
Yee, Andrew Zi Han WeBT3.8
Yi, Seung-Joon TuET4.9
Yim, Mark TuPO.4
TuPO.5
Yin, Hang TuET6.1
Yin, Wenjie TuET6.1
Yodowatari, Motoki WeAT6.2
Yokota, Masae TuAT6.4
Yokoyama, Koki WeAT6.2
Yoon, Chanyoung TuET1.9
YOU, BUM JAE TuCT3.3
Young, James Everett WeBT1.6
Yu, Chuang ThAT5.1
Yu, Janghoon WeCT1.1
Yu, Stephy ThAT4.3
Yuan, Chentai TuAT6.3
Yuan, Weihao TuET6.5
Yuan, Yifan WeBT5.4
Yukawa, Hikari ThAT6.5
YUN, Bruno WeDT5.4
Yun, Seungho WeET7.2
YuShen, Chen WeET6.8

Z

Zaccaria, Renato WeAT1.3
Zafari, Setareh WeET4.1
Zarrieß, Sina WeCT6.4
Zefran, Milos TuDT3.4
Zeng, Jingqiang TuDT1.4
Zguda, Paulina WeBT3.7
Zhanatkyzy, Aida WeAT3.5
Zhang, Brian John WeDT7.2
Zhang, Chaozhou WeET6.8
Zhang, Hao WeET7.3
Zhang, Heng ThAT4.5
Zhang, Qin TuCT5.3
Zhang, Tao WeCT5.9
Zhang, Wenlong TuET5.9
Zhang, Xiaohan TuPO.25
ZHANG, YOUQIANG WeCT5.6
Zhao, Botao WeET7.7
Zhao, ShiZun TuPO.49
ZHEGONG, SHANGGUAN ThAT5.1
Zheng, Yu TuAT3.5
Zhong, Junpei TuDT1.4
Zhu, James ThAT2.8
Zhu, Qin ThAT2.3
Zhu, Yaonan TuAT5.1
Zieliński, Krzysztof WeAT6.5
Zielinska, Teresa WeBT4.8
Zish, Kevin TuET3.4
Zytko, Douglas ThAT2.6
Źróbek, Karolina WeBT3.7

IEEE RO-MAN 2023 Program at a Glance

Location		Track T1 (Sicily, 1F)	Track T2 (Grand Ballroom, 2F)	Track T3 (Capri, 2F)	Track T4 (Sydney, 2F)	Track T5 (Miami, 2F)	Track T6 (Venice, 2F)	Track T7 (Panorama, 16F)	Lobby(2F)	Lobby(2F)	Optional Tour
Aug 28 (Mon) Day 1	09:00-12:00 (180′)	MoAT1 Workshop/Tutorial		MoAT3 Workshop/Tutorial	MoAT4 Workshop/Tutorial	MoAT5 Workshop/Tutorial	MoAT6 Worshop/Tutoria				
	12:00-13:30 (90′)	Lunch									
	13:30-16:30 (180′)	MoBT1 Workshop/Tutorial		MoBT3 Workshop/Tutorial	MoBT4 Workshop/Tutorial	MoBT5 Workshop/Tutorial	MoBT6 Worshop/Tutoria	MoBT7 Worshop/Tutoria			
	17:30-21:30 (240′)		**Welcome Reception** (with Cruise)								
Aug 29 (Tue) Day 2	09:00-09:10 (10′)		**Opening Ceremony**						**Robot Design Competition**	**Exhibition**	
	09:10-10:10 (60′)		**Keynote Speech** Alessandra Sciutti								
	10:10-10:20 (10′)	Coffee Break									
	10:20-11:20 (60′)	TuAT1 Special Session		TuAT3	TuAT4	TuAT5	TuAT6				
	11:20-11:30 (10′)	Coffee Break									
	11:30-12:40 (70′)	TuBT1 Special Session		TuBT3	TuBT4	TuBT5	TuBT6				
	12:40-14:00 (80′)	Lunch									
	14:00-14:40 (40′)	TuCT1 Special Session		TuCT3	TuCT4	TuCT5	TuCT6				
	14:40-15:20 (40′)	TuDT1 Special Session		TuDT3	TuDT4	TuDT5	TuDT6				
	15:20-15:30 (10′)	Coffee Break									
	15:30-16:30 (60′)		TuPO Poster Session-LBR								OP 2 Night Tour (17:00-21:00)
	16:30-16:40 (10′)	Coffee Break									
	16:40-18:10 (90′)	TuET1 Special Session		TuET3	TuET4	TuET5	TuET6				
Aug 30 (Wed) Day 3	09:00-10:00 (60′)		**Keynote Speech** Sangok Seok							**Exhibition**	
	10:00-10:20 (20′)	Coffee Break									
	10:20-11:20 (60′)	WeAT1 Special Session	RDC (Presentation) 10:20-12:10	WeAT3	WeAT4	WeAT5	WeAT6				
	11:20-11:30 (10′)			Coffee Break							
	11:30-12:50 (80′)	WeBT1 Special Session		WeBT3	WeBT4	WeBT5	WeBT6		Interactive Poster 12:10-12:50		OP 3 Lab Tour (13:00-16:00)
	12:50-14:00 (70′)	Lunch									
	14:00-15:20 (80′)	WeCT1 Special Session			WeCT4	WeCT5	WeCT6	WeCT7	**Robot Design Competition**		
	15:20-15:30 (10′)	Coffee Break									
	15:30-16:30 (60′)	WeDT1 Special Session			WeDT4	WeDT5	WeDT6	WeDT7			
	16:30-16:40 (10′)	Coffee Break									
	16:40-18:00 (80′)	WeET1 Special Session			WeET4	WeET5	WeET6	WeET7			
	18:30-20:30 (120′)		**Banquet** (Main Hall)	**Banquet** (Live Streaming)							
Aug 31 (Thur) Day 4	09:00-10:00 (60′)		**Keynote Speech** Tomohiro Shibata						**Robot Design Competition**	**Exhibition**	
	10:00-10:30 (30′)	Coffee Break									
	10:30-11:50 (80′)	ThAT1 Special Session	ThAT2	ThAT3	ThAT4	ThAT5	ThAT6 Special Session				
	11:50-12:10 (20′)		**Closing Ceremony** (Award)								
	12:10-13:10 (60′)	Lunch									
	13:10-16:00 (170′)	ThWT1 Workshop/Tutorial	ThWT2 Workshop/Tutorial	ThWT3 Workshop/Tutorial	ThWT4 Workshop/Tutorial	ThWT5 Workshop/Tutorial	ThWT6 Workshop/Tutorial				
	16:30-21:40 (310′)	**Farewell** (P-ark)									