

Robot Intelligence Technology and Applications Programme

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GMT London	FRIDAY 11 TH DECEMBER	
08:30-09:00	<p align="center">Pre-Conference Registration Pre-Conference Virtual Coffee Networking Times & Autonomous Vehicles: Welcome or Worrisome? Pre-recorded Professorial Lecture by Professor Jon Platts, Dean of Cardiff School of Technologies, Cardiff Met University</p>	
10:00-11:00	<p align="center">EUREKA Eisteddfod Roboteg I Registration (Primary Schools ONLY) Virtual Robotic Expo I Chaired by Mr Nigel Jones, EUREKA Robotics Lab, Cardiff Metropolitan University, UK</p>	<p align="center">Optional Virtual Tour: A Glimpse of - Cardiff Met University and the City of Cardiff Cardiff School of Technologies Building Launch Event at the Senedd, Cardiff Bay Drone Tour of Cardiff and Llandaff Campus BEng-MEng Robotics Engineering and EUREKA Robotics Lab KAIST and KAIST Urban Robotics Lab Innovative Manufacturing, Mechatronics and Sports Lab (iMAMS)</p>
11:00-11:30	<p>Break</p>	
11:30-12:30	<p align="center">EUREKA Eisteddfod Roboteg II Registration (Secondary Schools, Colleges, Public Audiences & RiTA2020 Conference Delegates) Virtual Robotic Expo II</p>	
12:30-14:00	<p>Lunch Break</p>	
14:00-15:00	<p align="center">Opening Ceremony</p> <p align="center"><i>Professor Cara Aitchison, President and Vice-Chancellor Cardiff Metropolitan University, UK</i></p> <p align="center">Professor Jon Platts <i>Dean of Cardiff School of Technologies, Cardiff Metropolitan University, UK</i></p> <p align="center">Reader / Assoc. Professor Dr Esyin Chew <i>Founder of EUREKA Robotics Lab, Cardiff Metropolitan University, UK</i></p> <p align="center">Professor Hyun Myung, Professor Jong-Hwan Kim & Professor Junmo Kim <i>KAIST, Korea</i></p> <p align="center"><i>Chaired by Dr Fiona Carroll, EUREKA Robotics Lab, Cardiff Metropolitan University, UK</i></p>	
15:00	<p align="center">Plenary Keynotes 1: Professor Ingmar Posner - Robots Thinking Fast and Slow <i>Oxford Robotics Institute</i> Chaired by Professor Yang Gao, Head of STAR LAB, Surrey Space Centre, Surrey University</p>	
	<p align="center">Plenary Keynotes 2: Dr Naseem Ghazali - Head and Neck Surgery On The Robotic Platform <i>ELHT NHS UK</i> Professor Heikki Kälviäinen, Head of Laboratory of Machine Vision and Pattern Recognition (MVPR), LUT University, Finland</p>	
15:00	<p align="center">Q&A Virtual Networking Reception Goodnight to Conference Delegates in Asia Pacific!</p>	

GMT London	SATURDAY 12 TH DECEMBER		
Pre-Conference Registration and Virtual Coffee Networking Times			
09:00-10:00	Plenary Keynotes 3		
	Professor Mary "Missy" Cummings - The Good, the Bad & the Ugly of Machine Learning, <i>Duke Robotics, US</i> Chaired by Assoc. Professor Dr Marcelo H. ANG Jr, <i>National University of Singapore</i>		
10:00– 11:15	Plenary Keynotes 4:		
	Professor David Turner - Horses (Or Robots) For Courses: Robotics And Education, <i>Beijing Normal University</i> Chaired by Assoc. Professor Deepti Mishra, <i>Norwegian University of Science & Technology, Norway</i>		
11:15-11:30	SLAM, Control and Soft Robotics I		Women in Robotics Special Interest Group (SIG) Forum
	<p>Chaired by João Sequeira, <i>Universidade de Lisboa Portugal</i></p> <ul style="list-style-type: none"> ALVIO: Adaptive Line and Point Feature-based Visual Inertial Odometry for Robust Localization in Indoor Environments (<i>Kwangyik Jung, Yeeun Kim, Hyunjun Lim & Hyun Myung, KAIST, Korea</i>) A Review of Supercoiled Polymer Artificial Muscles (<i>Gabriel Silva & JoãoSequeira, Universidade de Lisboa Portugal</i>) Feasibility of PI Control For A Double-Acting Cylinder Actuated By McKibben Muscles (<i>Mohd Akmal Mhd Yusoff, Ahmad Athif Mohd Faudzi and Mohd Shukry Hassan Basri, Universiti Teknologi Malaysia, MARDI Ministry of Agriculture and Agro-based Industry, Malaysia</i>) Model-based and Model-Free Robot Control: A Review (<i>Bowei Zhang & Pengcheng Liu, University of York, UK</i>) U-Net-based Segmentation for Electrical Lines and Its Application to Real Time Maintenance Algorithm for Electricity Facilities (<i>Jung Eun, Jeonghyo Ha, Sung Hyun Baek, Sangkeun Moon and Junmo Kim, Korea Electric Power Corporation & KAIST, Korea</i>) 	<p>Chaired by Dr Fiona Carroll, <i>EUREKA Robotics Lab, UK</i></p> <ul style="list-style-type: none"> Setting Up a Head and Neck Robotic Surgical Service: A Personal and Collective Challenge (<i>N. Ghazali, ELHT NHS UK</i>) Meet the Women in Robotics Team @eurekarobot: Fiona Carroll, Esyin Chew, Catherine Tryfona, Wenzhu Zhang, Sia Chow Siing, Zati Azizul, Sarah-May Mcvey, Linh Thuy Dong Aveen Najm & Parastoo Porhonor. 	
11:30-12:45	Q&A and Break		
	<p style="text-align: center;">Humanoids & Limbs</p> <p>Chaired by Professor Chu Kiong Loo, <i>University of Malaya, Malaysia;</i></p> <ul style="list-style-type: none"> Human-like Control System Design of the Lower Limb Rehabilitation Robot Based on Adaptive RBF Neural Network (<i>Dan Yongping, Ge Yifei & Wang Aihui, Zhongyuan Univeristy Technology, China</i>) A Balance Controller of the Humanoid Robot Based on Momentum Under External Impact (<i>Zhongqu Xie, Long Li & Xiang Luo, SouthEast University, China</i>) An Investigation on Shape of Leg for Small Leg Typed Rovers with a Function of Vibration Propagation (<i>Tomohiro Watanabe, Kojiro Iizuka & Shigeru Kuronuma, Shibaura Institute of Technology Tokyo, Japan</i>) Human Gait Prediction for Lower Limb Rehabilitation Exoskeleton Using Gated Recurrent Units (<i>Yan Wang, Zhikang Li, Yuguo Chen, Wudai Liao & Aihui Wang, Zhongyuan Univeristy Technology, China</i>) A Review of Motion Planning Algorithms for Robotic Arm Systems (<i>Shuai Liu & Pengcheng Liu, York University, UK</i>) 	<p style="text-align: center;">SLAM, Control & Soft Robotics I</p> <p>Chaired by Assoc. Professor Jongrae Kim, <i>Leeds University, UK</i></p> <ul style="list-style-type: none"> Vehicle Trajectory Prediction with Convolutional Neural Network & Sequence-to-Sequence (<i>Hyungi Kim & David Hyunchul Shim, KAIST, Korea</i>) Fractional-Order PIDμ Controller for Position Control of Intelligent Pneumatic Actuator System (<i>Mohamed Naji Muftah & Ahmad Athif Mohd Faudzi, Universiti Teknologi Malaya, Malaysia</i>) Ultra Wideband-based Precise Localization of Autonomous Vehicle in GPS-denied Environments (<i>Seung-Mok Lee, Keimyung University, Korea</i>). Finite Element Analysis (FEA) Deformation Model of McKibben Actuator using Simscape Multibody in Matlab (<i>Na Zhang and Ahmad Athif Mohd Faudzi, Universiti Teknologi, Malaysia</i>) Design and Analysis of a Vertically Suspended Soft Manipulator (<i>Mohamed Shoani, Mohamed Najib Bin Ribuan and Ahmad Athif Faudzi, Universiti Tun Hussein Onn Malaysia, Universiti Teknologi Malaysia</i>) 	<p style="text-align: center;">Cognitive, Service & Educational Intelligence I</p> <p>Chaired by Professor Yang Gao, <i>Head of STAR LAB, Surrey Space Centre, Surrey University</i></p> <ul style="list-style-type: none"> Re-exploration of ϵ-greedy in Deep Reinforcement Learning (<i>Muhamad Ridzuan Radin Muhamad Amin & Mohd Fauzi Othman, Universiti Teknologi Malaysia</i>) Service Humanoid Robotics: Review and Design of A Novel Bionic-Companionship Framework (<i>Jiaji Yang, Esyin Chew & Pengcheng Liu, EUREKA Robotics Lab, UK</i>). DIY 3-DOF Robotic Arm for Teaching and Learning (<i>Norashikin Thamrin, Rozita Jailani & Anwar P.P. Abdul Majeed, Universiti Teknologi MARA, Universiti Malaysia Pahang</i>) Machine Learning Based Predictive Maintenance System for Industrial Chain Conveyor System (<i>Goh et al. L.M. Su & Che Fai Yeong, Universiti Teknologi Malaysia, UCSI, MODU System(S) Pte Ltd</i>) Fully automated valet parking system based on infrastructure sensing (<i>Hyunjee Ryu, Beomyoung Kim, Heecheol Yoo & Jungwon Lee, KAIST, Korea</i>)

12:45-14:00	Lunch Break - <u>Cardiff School of Technologies Virtual Walk Through</u>
14:00	Plenary Keynotes 5 Dr Hanafiah Yussof – Robotics Role in Digital Transformation and Business, CEO Robopreneur Ltd, Malaysia <i>Chaired by Professor David Hogg, Professor of Artificial Intelligence, University of Leeds., UK</i>
15:00	Plenary Keynotes 6 Mr Simon Wang - The World Most Advanced Social and Service Robots, China <i>Chaired by Dr Simon Thorne, Cardiff School of Technologies, Cardiff Metropolitan University, UK</i>
15:00	Virtual Networking Reception Goodnight to Conference Delegates in Asia Pacific!

GMT London	SUNDAY 13 TH DECEMBER	
08:30–08:45	Pre-Conference Registration and Virtual Coffee Networking	
08:45–09:45	Drones & UAV I <i>Chaired by Dr Pengcheng Liu, York University, UK</i> <ul style="list-style-type: none"> • Peacock Exploration: A Lightweight Exploration for UAV using Control-Efficient Trajectory (<i>Eungchang Lee, Duckyu Choi & Hyun Myung, KAIST, Korea</i>) • Drone Swarm Operating and Monitoring System for States Error Compensation (<i>Inhwan Wee, Taeyeon Kim & David Hyunchul Shim, KAIST, Korea</i>) • An Investigation on the Effect of Unbalanced Overloading on Compact Electric Vehicle Steering During Tight Cornering, (<i>Baarith Kunjuni, Muhammad Azzat Bin Zakaria, Muhammad Heerwan Bin Peeie & Muhammad Izhar Ishak, Universiti Malaysia Pahang</i>) • Consensus-Based Auction Approaches for Autonomous Urban Air Mobility on Demand Systems (<i>Ho-Yeon Kim, Hyeon-Mun Jeong and Han-Lim Choi, KAIST, Korea</i>) • Training Algorithm for AI Robot Soccer (<i>Kyujin Choi and Dongsoo Har, KAIST, Korea</i>) 	
08:45-10:00	<p style="text-align: center;">Drones & UAV II</p> <p style="text-align: center;"><i>Chaired by Dr Zati Hakim Azizul, University of Malaya, Malaysia</i></p> <ul style="list-style-type: none"> • Robust Transport and Assembly Automation System Using UAV (<i>Hyunjee Ryu, Inhwan Wee & Hyunchul Shim, KAIST, Korea</i>) • Firefighter Drone Hardware Configuration and Vision-Based Detection & Control (<i>Dongwhi Kim, Taeyeon Kim & David Hyunchul Shim, KAIST, Korea</i>) • Automatic Hyperparameter Optimization in the Drone Racing Context (<i>Jedsadakorn Yonchorhor & David Hyunchul Shim, KAIST, Korea</i>) • Waypoint Planning for Mono Visual Drone Using the Minimal Bounded Space Method (<i>Zati Hakim Azizul, Seng Kuang Yap Yoong Keat Loh, University of Malaya</i>) • Research of Joystick Controller Robot to Manipulate an Aircraft Remote Controller (<i>Donghee Han, Dongwhi Kim & David Hyunchul Shim, KAIST, Korea</i>) 	<p style="text-align: center;">Social Intelligence & AI Applications</p> <p style="text-align: center;"><i>Chaired by Dr Fiona Carroll, EUREKA Robotics Lab, Cardiff School of Technologies, UK</i></p> <ul style="list-style-type: none"> • Optimization of User Comfort Index for Ambient Intelligence Using Enhanced Bat Algorithm (<i>Mohamad Razwan Abdul Malek, Nor Azlina Ab. Aziz, Farah Nur Arina Baharudin and Zuwairie Ibrahim, Multimedia University, University of Pahang, Malaysia</i>) • Robots and Uncertainty: An Investigation into The Impact of the Aesthetic Visualisation on People’s Trust of Robots (<i>Joel Pinney, Fiona Carroll & Paul Newbury, EUREKA Robotics Lab & Yard Ltd., UK</i>) • Design and Prototyping of a ‘Sweep’- Coating Method for Generating Thin Films (<i>Charya Mahasen Sendanayake, Fatanah Mohamad Suhaimi, Yew Ming Chen, Chee Pin Tan and Siti Hawa Ngali, Monash University, Universiti Sains Malaysia & Western Digital Ltd.</i>) • A Strategic Search Algorithm in Multi-Agent and Multiple Target Environment (<i>Azizkhon Afzalov, Ahmad Lotfi & Mehmet Emin Aydin, Nottingham Trent University, University of the West of England, UK</i>) • Analysis of Auditory Evoked Potential Signals using Wavelet Transform and Deep Learning Techniques (<i>Md Nahidul Islam, Norizam Sulaiman, Mamunur Rashid, Md Jahid Hasan & Mahfuzah Mustafa, Univesity Malaysia Pahang</i>)

<p>10:00–11:15</p>	<p style="text-align: center;">Click here to register</p> <p style="text-align: center;">PhD Three-Minutes Thesis (3MT) Competition</p> <p style="text-align: center;"><i>Judges by Dr Wai-Keung Fung, Dr Shadan Khan & Dr Anwar P.P. Abdul Majeed.</i></p>	<p style="text-align: center;">Healthcare Intelligence & AI Applications</p> <p style="text-align: center;"><i>Chaired by Dr Muhammad Aizzat Zakaria, Universiti Malaysia Pahang, Malaysia</i></p> <ul style="list-style-type: none"> • Rethinking Autism: A Review on the Use of HRI Platform to Improve Joint Attention and Imitation Skill for ASD Children (<i>Sarah Afiqah Mohd Zabidi, Hazlina Md. Yusof, Shahrul Naim Sidek, Mohammad Ariff Rashidan & Aimi Shazwani Ghazali, International Islamic University Malaysia</i>) • Texture Analysis of Blood Vessels in Thermal Image for Affective States Classification on Children (<i>Nazreen Rusli, Mohammad Ariff Rashidan, Shahrul Na'Im Sidek, Hazlina Md Yusof, Nor Izzati Ishak and Taufik Yunahar, International Islamic University Malaysia & ProStrain Technologies Sdn. Bhd.</i>) • The Classification of Wink-based EEG Signals: The use of Transfer Learning Models and optimised KNN classifier (<i>Jothi Letchumy and Anwar P.P. Abdul Majeed, Universiti Malaysia Pahang</i>) • Wearable Sensors Based Remote Patient Monitoring Using IoT Data Analytics (<i>Wei Tong Han, Sew Sun Tiang, Wei Hong Lim, Mastaneh Mokayef, Koon Meng Ang and Yanan Liu, UCSI University, Malaysia</i>) • Optimization of User Comfort Index for Ambient Intelligence Using Dynamic Inertia Weight Artificial Bees Colony Optimization Algorithm (<i>Farah Nur Arina Baharudin, Nor Azlina Ab. Aziz, Mohamad Razwan Abdul Malek and Zuwairie Ibrahim, Multimedia Universty & University Malaysia Pahang.</i>)
<p>11:15– 11:30</p>	<p style="text-align: center;"><i>Chaired by Mr Nigel Jones, EUREKA Robotics Lab, Cardiff Metropolitan University, UK</i></p> <p style="text-align: center;">3MT Competition Award Announcement – Professor Edmond Prakash & Dr Wai Keung Fung The RiTA2020 Best Paper Award – Dr Anwar Majeed and Dr Pengcheng Liu & Closing of RiTA2020</p> <p style="text-align: center;"><i>by Reader / Assoc. Professor Dr Esyin Chew Founder of EUREKA Robotics Lab, Cardiff Metropolitan University Cardiff Metropolitan University, UK</i></p> <p style="text-align: center;">See You in RiTA2021</p>	