



30th October -
1st November 2020
Cardiff, Wales

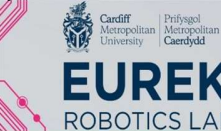
The 8th International Conference on RiTA

Robot Intelligence Technology and Applications

In conjunction with **EUREKA Eisteddfod Roboteg**, the first Robotics Expo in Wales

2020.icrita.org

JOINTLY ORGANISED BY



EUREKA
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WELCOME

Under the theme of this year's conference in Cardiff, "Ready, willing and able for Robot Intelligence Tech & Apps?", the International Conference on Robot Intelligence Technology and Applications (RiTA) 2020 aims to serve as a platform for academics, researchers, government & policymakers, experts, industrial practitioners and other relevant stakeholders in the dissemination of new knowledge on RiTA fundamental research, design & developing RiTA, working & living with RiTA, and shaping RiTA for ethical and legal governance.

Contact us:

RiTA 2020 Secretariat
info@icrita2020.org

"READY, WILLING AND ABLE FOR ROBOT INTELLIGENCE TECH & APPS?"

EUREKA Robotics Lab

United Kingdom



CO-ORGANISED BY



IMPORTANT DATES

- 1st July 2020: Deadline of Paper Submission
- 15th Aug 2020: Notification of Acceptance
- 15th Sept: Final Manuscript due

PUBLICATION

All accepted and presented papers will be published in the conference proceedings on IEEE Xplore Digital Library. Extended version of conference papers from the RiTA 2020 with at least 50% new content are welcomed to submit to the following possible journals (TBC: special issues proposals under consideration) IEEE Access (impact factor of 4.098 in the 2018 JCR), Malaysian Journal of Computer Science (Web of Science Q4 and Elsevier's Scopus Q2-indexed); or On the Horizon (Scopus & ESCI-indexed).

TECHNICAL CO-SPONSORS:



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The 8th International Conference on RiTA2020 welcome high-quality papers as follows:

Cognitive Intelligence

Machine learning
Cognitive modeling of agent systems
Probabilistic and uncertain reasoning
Multi-criteria decision making
Task scheduling
Memory management
Fuzzy reasoning
Reasoning strategies
Brain models / cognitive science
Other aspect of Cognitive Robotics

Social & Service Intelligence

Intelligent interactive technology
Human-robot interaction
Human-machine interface/integration
Teleoperation/ telerobotics/ haptics
Human biology and biomechanics
Markets and computational societies
Interface design and assessment
Chatbot
Social robotics: model & implementation
Other aspect of Service & Social Robotics

Educational Intelligence

Reinforcement learning
Smart assessment & feedback
Educational theories for robotics
Robotic teaching assistant:
Design thinking for education
intelligence
STEM with robotics
STEAM with robotics
Other aspect of Educational Robotics

Behavioral Intelligence

Kinematics/dynamics/control
Task/motion/trajectory planning
Mobile/humanoid/micro/nano robotics
Neuroscience based control
Neurobotics
CPG-based control
Physiologic signals integrated robot control
Ambient Intelligence
Sensor integration/fusion/perception
Multisensor data fusion
Navigation/ SLAM/ localization
Distributed intelligent algorithms and techniques
Ubiquitous computing

Artificial Intelligence

Deep learning, Deep neural networks, Image understanding, Natural language processing, Speech, voice, text recognition, Expert systems, Reasoning & Inference Planning, video and data transmission / processing for robots, action & gesture recognition for robots.

PhDs or Student Track: 3MT Competitions

Conference Scope

Collective Intelligence

Multi-robot systems
Cellular/distributed/ cooperating robotics
Learning and hybrid systems
Human knowledge discovery
Modeling and system
Swarm intelligence
Cooperative Systems and Control

Applications

Digital creatures
Intelligent agents
Computer vision
Virtual/Augmented reality
Robotics for tourism or hospitality
Robotics for healthcare and rehab
Robotics for Military
Robotics for Surveillance
Pattern recognition
Face recognition
Finger print recognition

Genetic & Quantum Intelligence

Computational intelligence
Evolutionary algorithm
Evolutionary robotics
Mimetic algorithm
Immune algorithm
Quantum computing
Quantum Support Vector machine
Quantum robotics

Other

Soft robotics
Bio-inspired robotic design & control
Self-propelled capsule robotic systems
Robotics Control with AR
Aesthetics and Robotics
Ethical, Social, Legal and Policy
Implications for RiTA
Chatbots

Access facilities around the UK

Robotics innovation is supported across the UK through research facilities that allow collaboration between industry and academia. Leading centres are shown below with more specialist centres listed in relevant sections throughout this document.

- 1 National Robotarium**
A multimillion pound investment to create an innovation hub for robotics, delivering leading-edge research and support for business creation and growth, as well as data skills. To be built at Heriot-Watt University in collaboration with the University of Edinburgh.
- 2 Centre for Intelligent Autonomous Manufacturing Systems**
A multidisciplinary research centre at Queens University Belfast, developing innovative technologies for digital manufacturing. Research themes include flexible automation, human/robot & robot/robot collaboration, and autonomous decision making.
- 3 EUREKA Robotics Lab**
A flagship research cluster at the Cardiff School of Technologies, EUREKA Robotics Lab undertakes international collaborations with companies and universities with a focus on social and service robotics.
- 4 Centre for Autonomous Systems**
Based at the University of Liverpool, the Centre provides expertise in practical autonomous systems for industrial, healthcare and environmental uses. The Virtual Engineering Simulation Lab and Robotic Autonomy Simulation Laboratory at the Virtual Engineering Centre, provide high-fidelity simulation and analysis for autonomous systems across sectors.
- 5 Robotics Leeds**
A network of more than 100 researchers across multiple disciplines with an interest in robotics and AI. Working with industrial partners to perform world leading research in medical robotics, field and infrastructure robotics and enabling technologies for autonomy.
- 6 Sheffield Robotics**
A partnership between universities in Sheffield with one of the largest portfolios of ongoing publicly-funded robotics. Working with industry on new robotic technologies and human-robot interactions.
- 7 Lincoln Agri-Robotics**
The UK's first global Centre of Excellence in agri-robotics with world-leading expertise from over 40 scientists in robotics, AI and agriculture. Facilities include the world's first fully robotic fruit farm and industrial scale robotics for food processing.
- 8 Bristol Robotics Lab**
The most comprehensive academic centre for multi-disciplinary robotics research in the UK. Home to a community of over 200 academics, researchers and industry practitioners.
- 9 Oxford Robotics Institute**
Via numerous collaborations and industry partnerships focused on field robotics, ORI's researchers and engineers have extensive experience in developing and deploying autonomous systems that apply AI to solve real world problems.
- 10 Remote Applications in Challenging Environments**
The UK Atomic Energy Authority's centre for remote applications in challenging environments is the global in fusion remote operations and maintenance.
- 11 Hamlyn Centre**
Based at Imperial College London, the focuses on technological innovation in robotics with a strong emphasis on clinical translation.

Back to reasons to invest in UK robotics



CONFERENCE FEES

	Early Bird (20 th Sept)	Regular (after 20 th Sept)
Attendee / Student rate	USD250	USD350
Presenter rate	USD500	USD600

Conference registration fee includes admission to RiTA2020, Robots Eisteddfod, EUREKA Robotics Lab and campus tour, program booklet, welcome reception, conference banquet, refreshment breaks, and lunches.