CAMBRIDGE WIRELESS

A joint Academic & Industry SIG & Future Devices & Technologies SIG Event

Robotics: Shaping the Future with Intelligence and Connectivity

30th June 2025

Kindly hosted by The Bradfield Centre, Cambridge

Venue: Bradfield Centre, 184 Cambridge Science Park, Milton Road, Cambridge, CB4 0GA

AGENDA

13:00	Registration and networking over tea & coffee
13:30	Welcome from **Cambridge Wireless**. **Michaela Eschbach, CEO of Cambridge Wireless**
13:35	Session 1: Chaired by **David Roberts, GSMA** & CW SIG Champion
13:40	**Synthesizing Multi-Robot Policies: From Cooperative Perception to Human-Led Fleet Control** **Amanda Prorok, Professor of Collective Intelligence and Robotics in the Department of Computer Science and Technology, Cambridge University, and a Fellow of Pembroke College.** How are we to orchestrate large teams of robots? How do we distill global goals into local robot policies? And how do we seamlessly integrate human-led fleet control? Machine learning has revolutionized the way in which we address these questions by enabling us to automatically synthesize agent policies from high-level objectives. In this presentation, I first describe how we leverage data-driven approaches to learn interaction strategies that lead to coordinated and cooperative robot behaviors. I will introduce our work on Graph Neural Networks, and show how we use such architectures to learn multi-agent policies through differentiable communications channels. I present experimental results with mobile robots engaged in cooperative perception, formation control, and human-led path-finding; I also show how the methods scale to very large-scale systems, and how they are capable of modelling complex physical interactions in close-proximity flight with multiple quadrotors.
14:05	**Q&A**
14:10	**Human Robot Collaboration in Industry** **Azmat Hossain, Business Development Director, Extend Robotics** The rapid advancements we are making will enable closer collaboration between humans and robots, enabling human skills to be utilised for robot training and deployment, letting industries to adopt robots more easily and efficiently. We are looking at a whole new way of working which will unlock benefits for everyone.
14:30	**Q&A**
14:40	**Refreshment break and Extend Robotics Demo**
15:20	**Session 2**: **Professor Kevin Morris, University of Leeds** & CW SIG Champion
15:25	**Autonomous Robotics in Minimally Invasive Surgery** **Dr Dominic Jones, Lecturer in Medical Robotics, University of Leeds** My work focuses on introducing autonomy into minimally invasive surgical robotics to support and enhance surgeon performance. In this talk, I will review the current clinical state of robotic surgery, highlight how autonomy can assist, and present recent developments from our group in automating key surgical tasks.
15:55	**Q&A**

16:00	**From tools to teammates: the future of human-robot interaction** **Dr Ali Shafti, Head of Human-Machine Understanding, Cambridge Consultants** As we enter the Physical AI era, where intelligent systems with human-like perception, reasoning and planning are embodied in robotics, we face a fundamental mismatch: dumb interfaces for intelligent partners. Current interaction paradigms limit these to mere tools with clunky instructions, preventing them from becoming true teammates. The transformation from AI tool to AI teammate requires deeper Human-Machine Understanding enabling machines to interpret behaviour and adapt support based on intent, workload and experience - just as a good teammate would do. This advanced Human-Robot Interaction is essential across manufacturing, healthcare and consumer applications where robot tasks are deeply intertwined with human activities. In this talk, I'll describe emerging trends in this critical area, our work translating research into industrial innovation, and a roadmap for the future of human-robot interaction.
16:20	**Q&A**
16:25	Panel with all speakers
16:55	**Closing remarks and event ends**

With the permission of the speakers, presentations will be available by request following the event

Profile of organiser

Cambridge Wireless -www.cambridgewireless.co.uk
CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With an active community of over 1000 businesses ranging from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 20 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and position their organisations in key market sectors. The CW team organise major conferences and competitions along with intimate industry networking events and dinners.

Profile of Host

Bradfield Centre - www.bradfieldcentre.com
Our aim is to attract ambitious like-minded entrepreneurs from both Cambridge and around the world; co-locate them in scalable, state-of-the-art facilities; immerse them in a vibrant, collaborative, and inclusive culture; whilst connecting them to investors and other support organisations to help them grow.

The Academic & Industry SIG

The academic community has always been known for a stream of innovative, pioneering and exciting products, discoveries and inventions which have helped in paving the way for the wireless era. The Academic and Industry SIG is a forum at which participants can illustrate and discuss current applications and concepts, including projects in development which may be searching for collaborators. It is championed by:

- **Dr Antonio Di Buono, Research Technologist, United Kingdom National Nuclear Laboratory -** https://uknnl.com
- **Professor Kevin Morris, Professor of Radio Frequency Engineering, University of Leeds -** www.leeds.ac.uk
- **Dr Ian Wassell, Senior Lecturer, Computer Laboratory, University of Cambridge -** www.cst.cam.ac.uk

To learn more about the activities of this group and its Industry Champions please visit:
https://www.cambridgewireless.co.uk/special-interest-groups/academic-industry.html

The Future Devices & Technologies SIG

The Future Devices & Technologies SIG explores the future of such myriad devices and facilitates members to envision the future beyond those available today. We aim to drive innovation in all areas of wired and wireless devices and consider the enabling technologies and components necessary to realise the future. It is championed by:

- **Nadia Aziz, Innovation Consultant, Unbounded Future Ltd**
- **Zahid Ghadialy, Principal Analyst & Consultant, 3G4G - www.3g4g.co.uk**
- **David Roberts, GSMA**
- **Charles Sturman, CEO, TechWorks**

To learn more about the activities of this group and its Industry Champions please visit:
https://www.cambridgewireless.co.uk/special-interest-groups/future-devices-technologies.html

Profile of speakers

Amanda Prorok, Professor of Collective Intelligence and Robotics in the Department of Computer Science and Technology, Cambridge University, and a Fellow of Pembroke College. www.cst.cam.ac.uk

Amanda Prorok is Professor of Collective Intelligence and Robotics in the Department of Computer Science and Technology at the University of Cambridge, and a Fellow of Pembroke College. In her work, she pioneered differentiable communications methods for multi-agent systems, with applications to multi-robot perception and control. Amanda has given invited keynotes at TEDx and ICRA, and has been honored by numerous research awards, including a prestigious ERC Starting Grant. Amanda is an IEEE Senior Member, serves as Associate Editor for Autonomous Robots (AURO) and was the Chair of the 2021 IEEE International Symposium on Multi-Robot and Multi-Agent Systems. Her PhD thesis was awarded the Asea Brown Boveri (ABB) prize for the best thesis at EPFL in Computer Science.

Azmat Hossain, Business Development Director, Extend Robotics - www.extendrobotics.com

Azmat Hossain is a strategic business developer with over 10 years track record in developing and commercializing cutting-edge technology solutions worldwide. His passion is to advance the field of robotics and automation and create disruptive solutions which can solve critical problems in society. Azmat has completed his MBA from the University of Edinburgh and has previously worked at The National Robotarium in Edinburgh. Currently Azmat is working as the Business Development Director at Extend Robotics, developing the most intuitive human robot interface in the world.

Dr Dominic Jones, Lecturer in Medical Robotics, University of Leeds - www.leeds.ac.uk

Dr. Dominic Jones is a Lecturer (Assistant Professor) in Medical Robotics at the University of Leeds. His research focuses on enhancing minimally invasive surgical robotics by introducing additional perception to enable assistive autonomy and augment surgeon dexterity. He is particularly interested in improving the safety of robot-tissue interactions in surgery, and developing affordable medical devices for a range of clinical settings. Dr. Jones received his MEng in Biomedical Engineering from the University of Leeds in 2015, followed by a PhD in 2019 with the Healthcare Mechatronics Group, where he developed low-cost tactile sensing for surgical instruments. He continued at Leeds as a Postdoctoral Researcher, creating wearable tactile sensors in orthotic devices to assess and predict disease progression based on force-skin interactions. In 2021, he joined the STORM Lab, advancing research in robot-assisted minimally invasive surgery, including automated intra-abdominal scanning and sensor augmentation of surgical tools. He was appointed to his current academic position in 2023.

Dr Ali Shafti, Head of Human-Machine Understanding, Cambridge Consultants – www.cambridgeconsultants.com

Ali leads a team of specialists in AI, Psychology, Cognitive and Behavioural Sciences to create next generation systems that can truly understand and support users in dynamic, strenuous environments. Ali holds a PhD in Robotics with focus on Human-Robot Interaction and has more than 10 years experience in research and development for human-machine interaction.

Delegate List	
Name	**Organisation**
Deepti Agarwal	Watermill Accounting Limited
Jane Aldridge	Camgenium
Mohammed Al-Imari	MediaTek
Viji Arulraj	Siemens Digital Industries
Christian Axelsson	Sigma Connectivity
Steven Baines	TWI
Ali Baokbah	QMUL
Gwen Bergius	Form the Future CIC
Alex Bienek	CRFS Ltd
Annie Brooking	Magic Monkey
Chris Bruce	Sentient
Henry Bulman	CGI
Rick Chandler	Communications Management Association
Phil Claridge	Mandrel
Zexin Deng	University of Warwick
Hanni Doctor	PARAMAGNETIC COMMUNICATIONS LTD
Viktor Doychinov	University of Bradford
Dmitriy Dubovitskiy	Oxford Recognition Ltd
Christopher Dunleavy	Venner Shipley LLP
Laura Ellis	BBC
Michaela Eschbach	Cambridge Wireless
Simon Fell	Innovizr Ltd
Sally Field	CW
Daniel Gerard Knought	Guild Capital Partners Ltd
William Gerry	Novanta
Zahid Ghadialy	3G4G
Renato Goodfellow	Commercis
John Grant	Nine Tiles
Kailu Guo	Queen Mary University of London
Tom Hall	Martlet Capital
Ben Hallewell	Novanta (Cambridge)
Karthika Haridas	ARM
Louisa Harvey	Clarimed Inc
Andrew Hazell	Swan Endosurgical
Azmat Hossain	Extend Robotics

Syeda Sohaiba Hussaini	42 Technology
Palaniyandi Jawahar	Blue Lotus Consulting Limited
Malkit Jhitta	RoodMicrotec
Dominic Jones	University of Leeds
Joanna Jones	Cambridge Consultants
Reza Karimi	Huawei
Dominic Kemps	Sommartel Ltd
Clare Kettle	Cambridge Wireless
Namrata Lachman	Extend Robotics
Shu Kwan Sam Lam	TE
Dennison Lau	Qualcomm
Yan Fen Lee	University of East Anglia
Sylvia Lu	Silicon Catalyst
Alan McKenna	University of Kent
Ali McNeil	Cambridge Consultants
Koen Mioulet	Ulwimo, EUWENA; enterprise wireless in Europe
Kevin Morris	University of Leeds
Joe Morton	42T
Fiona Nalden	Cambridge Wireless
Michael Nedzelsky	Diffblue Ltd
Felix Obite	Queen Mary University of London & University of Genoa
Olu Orugboh	Synergy Solutions
Mete P	Reneural Technologies
Cristina Penine	IP21
Michael Phillips	Renfrew Group International
Pawel Piotrowicz	Venner Shipley
Stephen Price	CODICO GmbH
Amanda Prorok	University of Cambridge
Jay Ranjan	Journai
Ali Raza	Satellite Applications Catapult
Jen Richardson	Project Cambridge
David Roberts	GSMA
Yousef Saif	Samsung Cambridge - SCSC
Mahesh Santiapillai	Cambridge Enterprise
Ali Shafti	Cambridge Consultants
Yaochun Shen	Liverpool University
Lengwe Sinkala	ClariMed

Alex Smith	Antevia Ltd
Charles Sturman	TechWorks
Valentin Tablan	ieso Digital Health
Ken Tam	University of East Anglia
Steve Thompson	Form the Future CIC
Bill Thompson	BBC
Jordan Tinkler	Appleyard Lees IP LLP
Niels Tjornhoj-Thomsen	Forward NPD
Stephen Tunnicliffe-Wilson	Alliance Strategy Consulting Ltd
Lou Walker	BT
Zoe Walker-Fagg	Anglia Ruskin University
Sarah Wang	Cryfish.io
Ian Wassell	University of Cambridge
Samsurin Welch	University of Cambridge
Peng Wu	University College London
Zhenhui Yuan	University of Warwick
Bin Zhang	Brunel University London
Peter Zipp	EDHEC Business School