

19 March 2020 (9.00 – 22.00)

- 09.00 – 10.00 **Registration/Refreshments** (LR4, Department of Engineering Foyer, Baker Building)
- 10.00 – 10.15 **Welcome Remarks**, Tom Duckett (UoL) (LT1, Inglis Building, Ground Floor)
- 10.15 – 11.15
Iain Flint (G's Growers) *'Robotics and Horticulture - the Path to Farming 4.0'*
Thomas Engel (John Deere) *'Progress on autonomous vehicles from the machinery manufacturer's perspective'*
- 11.15 – 12.15 **Short presentations**
Elizabeth Sklar (UoL), *'Shared Decision Making in Human-Robot Teams'*
Grzegorz Cielniak (UoL), *'Crop/Weed Discrimination for Autonomous Weeding Robots'*
Marc Hanheide (UoL), *'Robotics Solutions for strawberry harvesting'*
Alexander Jones (UoC), *'High-resolution biosensors and actuators for plant hormone biology'*
- 12.15 – 14.00 **Lunch and Poster Session** (LR4)
- 12.30 – 14.00 **Robot Demonstrations** (The OHMC)
- 14.00 – 15.00 **Short presentations**
Halvard Grimstad (Saga Robotics) *'Thorvald - From research to commercial deployment'*
Duncan Robertson (Dogtooth Technologies) *'Important challenges in commercial (as opposed to academic) Agri-Robotics'*
Amelia Armour (Amadeus Capital Partners) *'Investing in robotics and automation'*
Antonio D'Ammaro (Beko) *'Robots in the kitchen: from field to plate'*
- 15.00 – 15.30 **Panel Discussion** led by Dr Fumiya Iida
- 15.30 – 17.00 **Refreshments** (LR4)
Robot demonstrations (The OHMC, Inglis Building) -- Open to public
- 17.00 – 18.00
Roland Siegwart (ETH) (LT1, possible LT2)
'Innovative Drones for Environmental and Agricultural Monitoring'
(Public Lecture within The Cambridge Science Week, includes Q&A session)
- 18.30 – 22.00 **Evening Reception + College Dinner** (19.00 start – St Catharine's College)

20 March 2020 (9.00 – 15.00)

- 07.30 – 09.00 **Breakfast** – St Catharine's College
- 09.15 – 09.35 *Tour of St Catharine's College with Craig Driver (optional)*
- 10.00 – 10.15 **Welcome and Announcements**, Fumiya Iida (LT1, Inglis Building, Ground Floor)
- 10.00 – 10.45 **Short presentations**
Graham Finlayson (UEA) *'Can spectra be measured with a conventional camera'*
Fulvio Forni (UoC), *'What is feedback control and what it can do in agriculture'*
Helen Francis (UoC) *'Cambridge Industry collaboration'*
- 10.45 – 11.30 **Refreshments + Networking** (Teaching Room, Ground Floor, James Dyson Building)
- 11.30 – 12.00
Chris Roberts (Cambridge Consultants) *'Commercial development of agri-food technology, including robotics and AI'*
- 12.00 – 12.30 **Discussion**: How to develop projects for different career paths led by Chris Roberts and Fumiya Iida
- 12.30 – 13.30 **Lunch** (Teaching Room, Ground Floor, James Dyson Building)
- 13.30 – 15.00 **Robot demonstrations + Wrap-up** (The OHMC, Inglis Building, Ground Floor)

ADDITIONAL CONFERENCE ACTIVITIES

19 March 2020

ROBOT DEMONSTRATIONS

Observatory of Human-Machine Collaboration, Old Structures Building, Department of Engineering

19 March 2020, 12.30 – 14.00 (Conference attendees only)

19 March 2020, 15.30 – 17.00 (General public/Conference attendees)

20 March 2020, 13.30 – 15.00 (Conference attendees only)

DEMONSTRATION

Lettuce harvesting robot
Robotic omelette cooking
Robotic dishwasher loading
Flexible robotic manufacturing
Wrist-driven anthropomorphic robotic hand grasping
Robot scientist exploring shapes of falling papers
Expressive piano playing robot
Robotic palpation learning
Mobile robots in extreme environments for disaster response
Haptic-guided teleoperation for extreme environments
Control of flexible and modular robots
Soft capacitive sensing and soft hydraulic actuation

PRESENTER

Simon Birrell, Fumiya Iida
Kai Junge, Thomas Thuruthel, Fumiya Iida
Isobel Voysey, Simon Hauser, Fumiya Iida
Kieran Gilday, Josie Hughes, Fumiya Iida
Kieran Gilday, Fumiya Iida
Toby Howison, Fumiya Iida
Cheryn Ng, Luca Scimeca, Fumiya Iida
Luca Scimeca, Fumiya Iida
Kai Junge and Cambridge Robot Society
University of Lincoln & National Centre for Nuclear Robotics
Daren Wong, Ethan Nott, Fulvio Forni
Lam Hearst, Tom Vinestock, Fulvio Forni

POSTER SESSION

Lecture Theatre 4, Department of Engineering, Baker Building

19 March 2020, 12.15 – 17.00

POSTER

Ripeness estimation of crops by touch
Lettuce leaf peeling robot
Robotic palpation
Optimising falling-paper shapes
Optimising tactile sensor morphology by using conductive thermoplastic elastomer
Wrist driven passive adaptive hand grasping
Online learning to handle environmental noise in a lettuce picking robot
Design and control of an expressive piano playing robot
Autonomous robotic dishwasher loading
Learning to walk in arbitrary morphologies
Chemical-free weeding

More will be added later

AUTHOR

Luca Scimeca, Fumiya Iida
Luca Scimeca, Josie Hughes, Perla Maiolino, Fumiya Iida
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Toby Howison, Fumiya Iida
Thomas Thuruthel, Fumiya Iida

Kieran Gilday, Fumiya Iida
Simon Birrell, Josie Hughes, Fumiya Iida

Cheryn Ng, Luca Scimeca, Fumiya Iida
Isobel Voysey, Thomas Thuruthel, Fumiya Iida
Simon Hauser, Auke Ijspeert
Tom Lane, Garford Farm Machinery

CONFERENCE MEETINGS

20 March 2020

12.30 -13.30 Advisory Board

Board Room, Baker Building 2 Floor

Members:	Dave	Ross	Agri-EPI Centre Ltd
	Jim	Dimmock	AHDB Agriculture and Horticulture Development Board
	Gabriel	Hamid	Buhler UK Limited
	Julie	Bremner	CEFAS Centre for Environment, Fisheries & Aquaculture Science
	Louise	Sutherland	CERES Cambridge Enterprise Limited
	Jeremy	Hadall	Manufacturing Technology Centre (MTC)
	Alison	Capper	National Farmers' Union (NFU)
	Eric	Ober	National Institute of Agricultural Botany
	Tom	Duckett	University of Lincoln
	Fumiya	Iida	University of Cambridge
	Simon	Pearson	University of Lincoln
	Kate	Smith	University of Lincoln

13.45 - 14.45 EDI Panel

Board Room, Baker Building 2 Floor

Members:	Belinda	Colston	University of Lincoln
	Kate	Smith	University of Lincoln
	Alison	Capper	National Farmers' Union
	Veronica	Egorova	University of Cambridge
	Karoline	Heiwolt	Agriforwards CDT student
	Willow	Mandil	Agriforwards CDT student
	Grzergorz	Sochaski	Agriforwards CDT student
	Roopika	Ravikanna	Agriforwards CDT student
	Eric	Ober	NIAB
	Ed	Hansom	IAgrE
	Dave	Ross	Agri-EPICentre Ltd
	Louise	Southerland	CERES