

**The
Alan Turing
Institute**



**UK-Japan
robotics and
AI research
collaboration
workshops**



Contents

| | |
|-------------------------------|---|
| About the Turing | 1 |
| About the Centre for Robotics | 1 |
| Collaborators | 2 |
| About the workshops | 3 |
| Agendas | 4 |



About the Turing

The Alan Turing Institute is the national institute for data science and artificial intelligence.

Founded in 2015, the Turing now has thirteen university partners and works with an extensive and thriving network of industry, public and third sector partners and collaborators.

The Turing has convened a world-class research community and has a crucial role advising policymakers and shaping the public conversation around data science and AI.

Through its strategic research programmes and projects the Turing works in partnership to apply data science and AI research to real-world problems, supporting the creation of new products, services and jobs.

We are here to help to make the UK the best place in the world for data science and AI research, collaboration, and business.

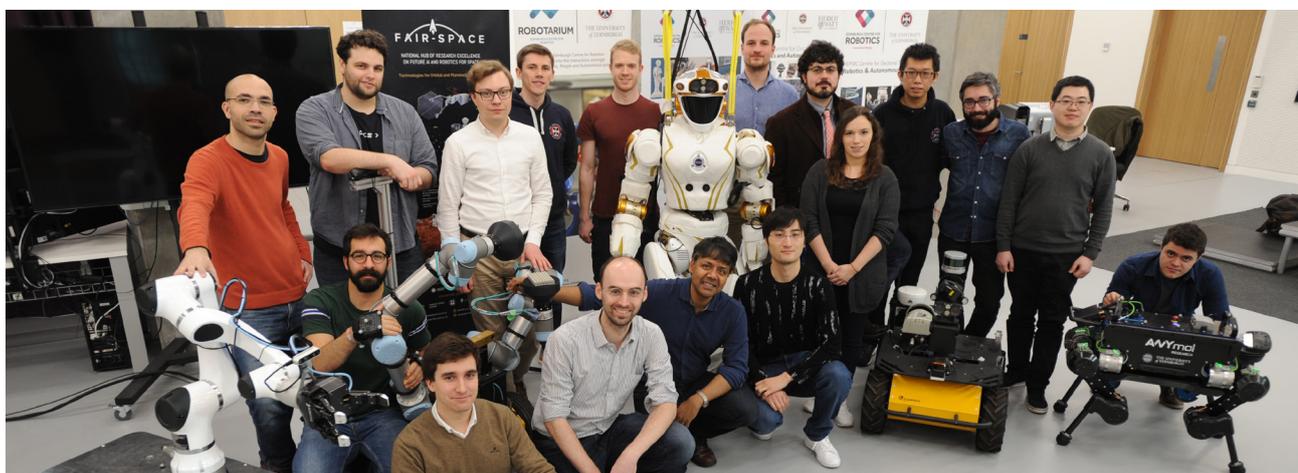
The Alan Turing Institute

About the Centre for Robotics

The Edinburgh Centre for Robotics (ECR) is a £120m joint venture between Heriot-Watt University and the University of Edinburgh, supported by EPSRC, Industry and the Universities.

It captures the expertise of 50 principle investigators of international standing from 12 cross-disciplinary research groups and institutes across the School of Engineering and Physical Sciences and the Department of Computer Science at Heriot-Watt University, and the Schools of Informatics and Engineering at the University of Edinburgh.

The Centre includes an EPSRC Centre for Doctoral Training (CDT) in Robotics and Autonomous Systems which trains innovation-ready postgraduates, the Robotarium, a £8m national capital equipment facility and the £35m ORCA Hub.



Collaborators



AIST

The National Institute of Advanced Industrial Science and Technology (AIST), one of the largest public research organisations in Japan, focuses on the creation and practical realisation of technologies useful to Japanese industry and society, and on “bridging” the gap between innovative technological seeds and commercialisation.

AIST has about 2000 researchers doing research and development at 10 research bases across the country. AIST is also actively building a global network by, for example, signing memorandums of understanding for comprehensive research cooperation with 30 major research institutes around the world.



NII

As Japan's only general academic inter-university research institution seeking to create future value in the new discipline of informatics, the National Institute of Informatics (NII) is dedicated to advance integrated research and development activities in information-related fields, including networking, software, and content.

These activities range from theoretical and methodological work through applications. NII collaborates with more than 100 research institutes and universities across the world, now including The Alan Turing Institute.



RIKEN AIP

The RIKEN Center for Advanced Intelligence Project (RIKEN-AIP) was launched in April 2016 and aims to achieve scientific breakthrough and to contribute to the welfare of society and humanity through developing innovative technologies.

RIKEN-AIP also conducts research on ethical, legal and social issues caused by the spread of AI technology and develop human resources.

About the workshops

Overview

As part of a wider UK government announcement relating to new scientific collaborations between UK and Japan in the fields of robotics, AI and the ethical use of data, the Turing's AI programme is hosting two workshops to initiate and develop such collaborations, in Edinburgh and London.

The aims of these collaborations will include researcher exchange placements, developing joint proposals for academic low-Technology Readiness Levels (TRL) research as well as industry-driven high-TRL research. There will also be networking and knowledge exchange activities.

The workshop on 17-18 September in Edinburgh will bring together leading researchers in AI and robotics from Japan and the UK.

This first workshop will help identify collaboration topics and is a very important first step in helping the AI programme establish a firm basis for future joint activities.

Following the workshop in Edinburgh, there will be an industry workshop at the Turing's HQ in the British Library in London on 19 September. This will align the high-TRL research focus with industry interest. One of the main objectives of the industry-focused day is to engage the appropriate private sector partners in supporting joint projects. See the preliminary agenda at the bottom of the page.

The event will conclude with a networking session, press release and social event at the Japanese Embassy in London on the evening of the 19 September.

Leadership and organisation

Professor Sethu Vijayakumar has been recently announced as Programme Co-Director for Robotics and Artificial Intelligence (RAI) at The Alan Turing Institute, helping shape and drive the national UK agenda in Robotics and Autonomous Systems.

The Turing RAI hub is based at the University of Edinburgh where the first two days of the workshop will take place.

Themes

The proposed three key themes for the collaboration tie closely with the AI strategic challenge theme of Robotics that Turing has recently announced for addressing data driven challenges, arising from, and towards, deployment of robotics platforms across domains.

- Scalable algorithms under constraints
- Methods for efficient multi-agent computations
- Verifiable, robust and explainable decision making for multimodal RAS assets

Outcomes

The expected outcomes of the workshop are:

- List of research topics grouped around key themes and lead PIs
- Agreement on Industry focused research (high TRL)
- Agreement on long-term Core Research Topics (low TRL)
- Research Exchange Mechanisms
 - Short-term Internships
 - UK and Japanese Government backed Research Funds

Agenda - Edinburgh

Informatics G.07 and Atrium, University of Edinburgh

17 September 2019

| Time | Talk | Speakers |
|---------------|---|--|
| 10:00 – 12:00 | Registration and poster session (All participants) | |
| 12:00 – 13:00 | Lunch | |
| 13:00 – 13:30 | Introduction to Edinburgh Centre for Robotics, The Alan Turing Institute and Bayes Centre | Professor Sethu Vijayakumar (Edinburgh Centre for Robotics and The Alan Turing Institute) Cristian Novotny (Bayes Centre) |
| 13:30 – 13:50 | RIKEN presentation | Professor Masashi Sugiyama |
| 13:50 – 14:10 | AIST presentation | Dr Yoshiki Seo |
| 14:10 – 14:30 | NII presentation | Dr Emmanuel Planas |
| 14:30 – 15:00 | Coffee break | |
| 15:00 – 17:00 | Topics of interest related to the workshop themes | Selected participants spotlight presentations |
| 17:00 – 18:00 | Edinburgh Centre for Robotics lab tour | |
| 18:30 – 21:00 | Dinner Playfair Library | Introduction: Professor Sethu Vijayakumar Welcome: Professor Dave Robertson , Head of College of Science & Engineering Dinner Keynote: Professor David Lane , Centre Director, Edinburgh Centre for Robotics Closing speech: Professor Jane Hillston , Head of School, Informatics |

18 September 2019

| Time | Talk | Speakers |
|---------------|--|--|
| 9:00 – 9:30 | Pastries and coffee | |
| 9:30 – 11:00 | Discussion and agreement on topics/challenges of interest | Participants to select one of the three themes/ breakout groups |
| 11:00 – 11:30 | Agreement on long-term core research topics (low TRL) | |
| 11:30 – 12:00 | Agreement on industry focused (short-term) research (high TRL) | |
| 12:00 – 13:00 | Lunch | |

Agenda - Edinburgh (cont.)

| Time | Talk | Speakers |
|---------------|--|---|
| 13:00 | RIKEN and Edinburgh data science and machine learning session (Attendance optional) | |
| 13:00 – 15:40 | Oral talks | Yasuo Tabei (RIKEN) Taku Komura (University of Edinburgh) Emtiyaz Khan (RIKEN) Michael Herrmann (University of Edinburgh) Tatsuya Harada (RIKEN) Michael Gutmann (University of Edinburgh) Mastoshi Hamanaka (RIKEN) Robert Fisher (University of Edinburgh) |
| 15:40 – 16:00 | Coffee break | |
| 16:00 – 18:40 | Oral talks | Qibin Zhao (RIKEN) Iain Murray (University of Edinburgh) Kohei Hatano (RIKEN) Stefano Albrecht (University of Edinburgh) Takanori Maehara (RIKEN) Michael Mistry (University of Edinburgh) Ha Quang Minh (RIKEN) |
| 18:40 | Dinner | |
| 19:30 | Close | |

Agenda - London

The Alan Turing Institute, The British Library, 96 Euston Road, NW1 2DB, UK
19 September 2019

| Time | Talk | Speakers |
|---------------|--|---|
| 11:30 – 12:30 | Registration and Lunch | |
| 12:30 – 13:00 | The Alan Turing Institute's presentation | Professor Sir Adrian Smith |
| 13:00 – 16:00 | Research topics for industrial collaboration | Professor Sethu Vijayakumar to summarise high TRL level research topics. Industry and Academia Research Carousel |
| 16:00 – 16:30 | Summary of agreed industrial research collaboration | |
| 16:30 | Bus transport to Japanese Embassy | |
| 18:00 – 21:00 | Networking event at Japanese Embassy of Japan 101-104 Piccadilly, London, W1J 7JT | |



turing.ac.uk
[@turinginst](https://twitter.com/turinginst)