The Alan Turing Institute announces new
director – press release appendices

Appendix 1

Professor Andrew Blake to be the first Institute Director of The Alan Turing Institute

The Board of The Alan Turing Institute is delighted to announce that Professor Andrew Blake has agreed to become the first Institute Director. He is expected to begin a 5-year appointment in October.

Andrew Blake is currently a Microsoft Distinguished Scientist and Laboratory Director of Microsoft Research UK. He is an Honorary Professor in Information Engineering at the University of Cambridge, and a leading researcher in computer vision.

He studied Mathematics and Electrical Sciences at Trinity College, Cambridge and after a year as a Kennedy Scholar at MIT and time in the electronics industry, he completed a PhD in Artificial Intelligence at the University of Edinburgh in 1983. Serving next on the faculty of the Computer Science Department in Edinburgh, he developed early variational approaches and optimisation algorithms for image processing. On the faculty of Engineering Science of Oxford University, subsequently as Professor, he pioneered a probabilistic approach to algorithms that can enable computers to behave as seeing machines. In 1999 he moved to Microsoft Research in Cambridge to found the Computer Vision Group which developed algorithms for image processing and 3D vision underlying several Microsoft technologies. In 2010 he became Laboratory Director at Microsoft, was appointed to the council of the Royal Society, and to the council of the Engineering and Physical Sciences Research Council (EPSRC) in 2012. He holds honorary doctorates at the Universities of Edinburgh and Sheffield.

Andrew was elected Fellow of the Royal Academy of Engineering in 1998 and Fellow of the Royal Society in 2005. He won jointly the IEEE David Marr Prize in 2001, and in 2006 the Royal Academy of Engineering awarded him its Silver Medal for ‘technical achievements in visual segmentation and motion tracking’. In 2007 he received the IET Mountbatten Medal (previously awarded to computing pioneers Maurice Wilkes and Tim Berners-Lee, amongst others) and the IEEE Distinguished Researcher award for ‘major research contributions in Computer Vision’ in 2009. In 2011 his computer vision team at Microsoft were awarded the Royal Academy of Engineering MacRobert Gold medal for their work on the machine learning algorithms in the Kinect 3D camera, which has subsequently sold in the tens of millions. In 2014, Andrew gave the 87th Gibbs lecture of the American Mathematical Society on ‘Machines that see, powered by probability’.

Commenting today Howard Covington, chairman of The Alan Turing Institute, said: "We are absolutely delighted that Andrew Blake has agreed to become the Institute’s first Director. His experience, drive, wisdom and enthusiasm will get the Institute off to a great start."
Professor Andrew Blake added: “I am very excited to be chosen for this unique opportunity to lead The Alan Turing Institute. The vision of bringing together the mathematical and computer scientists from the country’s top universities to develop the new discipline of data science, through an independent institute with strategic links to commerce and industry, is very compelling. The institute has a societally important mission and ambitious research goals. We will go all out to achieve them.”
Appendix 2

The Lloyd’s Register Foundation becomes The Alan Turing Institute’s first Strategic Partner

The Boards of the Lloyd’s Register Foundation (LRF) and of The Alan Turing Institute announce that LRF has approved (subject to contract) the award to the Institute of a research grant totalling £10 million over the next five years. The purpose of the grant is both to further the Institute’s core mission of data science research and to facilitate research into engineering applications of big data to enhance the safety of life and property at sea, on land and in the air.

Together the Lloyd’s Register Foundation and the Institute will undertake a 5-year programme of work focussed on building the emerging field of data science and the role of data-centric engineering within it. This will specifically recognise the value of data as an asset and seek to place data at the forefront of engineering design. The research challenges posed here go to the heart of the Institute’s research agenda and their solution will contribute to reduce some of the major global risks on the horizon: food, water and energy security, climate change, pandemic disease, unstructured urbanisation and global constraints.

Commenting today, Richard Clegg, MD of the Lloyd’s Register Foundation, said: “There is a remarkable alignment between the interests of the Lloyd’s Register Foundation and The Alan Turing Institute in the applications of big data to engineering. Such applications have the potential to increase efficiency, reduce costs, improve reliability and productivity, and all importantly enhance safety. The Foundation is looking forward working with The Alan Turing Institute to develop and be at the centre of the agenda around data-centric engineering worldwide. It is a crucially important research area for our Foundation.”

Professor Patrick Wolfe, who has led the Institute’s relationship with the Lloyds Register Foundation, said: “We are extremely pleased to be working together with the Lloyd’s Register Foundation to deliver a programme based on fundamental basic research in data science. The Foundation has recognised the value of becoming an early investor in an area with huge potential to transform engineering and create benefits for humankind on a global scale.”
Appendix 3

The Alan Turing Institute to work with GCHQ on Open Access and Commercial Data-analysis

The Alan Turing Institute and GCHQ have agreed in principle to work together with the wider national security community for the benefit of data science and analytics research in the UK. Both institutions have a mission to inform policy, propagate best practice and catalyse the next generation of ideas and methods for the use of big data. They have agreed to cooperate on training and research in data-analytical methods that may be applied in open access and commercial environments.

“GCHQ is delighted to be a partner of The Alan Turing Institute and have the opportunity to help maintain Alan Turing’s legacy for generations to come. Alan Turing spent much of his life working with data, both during and after the war, and it’s a fitting tribute that his name is associated with an institute that will dedicate itself to becoming the world leader in the analysis and application of big data and algorithm research” said Robert Hannigan, GCHQ's Director.

He added: “We believe that the Institute will allow GCHQ researchers together with our counterparts in national security and defence in the public sector to work with the best in the field, as well as providing the opportunity to share and develop our own techniques and ideas, across a broad array of sectors. This will help us meet the challenges set by the National Cyber Security Strategy.”

Howard Covington, Chairman of The Alan Turing Institute, said: “We are delighted to announce our relationship with GCHQ and the broader defence community. This takes us another step forward in building a network of strategic partners. GCHQ will support collaborative research on scientific matters of joint interest across a broad spectrum of possible applications. Through CESG, GCHQ’s Information Security arm, they will also advise us on our own data and information risk policies and practices. Like us, they are committed to excellence in data science and to supporting the development of the next generation of data scientists. This is great news for The Alan Turing Institute and for the UK.”
Appendix 4

The Alan Turing Institute is to collaborate with Cray Inc. and the Engineering and Physical Sciences Research Council (EPSRC) to exploit a Next Generation Analytics Capability on the UK’s Largest Supercomputer for Scientific Research, ARCHER

The Alan Turing Institute, Cray Inc., and the EPSRC today announce a collaboration that will provide a next generation big data analytics capability to the UK’s data sciences community. As part of this collaboration, EPSRC’s ARCHER supercomputer, based at the University of Edinburgh and currently the largest supercomputer for scientific research in the UK, will be enabled with advanced data analytics capabilities that will provide a scalable platform to enable the science community, commerce and industry to realise the value of big data for the UK economy. Cray will support research at The Alan Turing Institute that uses this new capability.

“Data analytics has the opportunity to transform the UK’s and world’s economies but in order for that to happen we must provide the leading data scientists with access to the best possible computing resources in the field, and this includes bringing supercomputing to bear on the largest data challenges” said Howard Covington, Chairman of The Alan Turing Institute. “Being able to utilise the ARCHER supercomputer for data analytics projects will enable industry and the government to lead the way in showing how leveraging big data can have a hugely positive impact on the UK’s economy and international competitiveness.”

“Cray is honoured to be working with The Alan Turing Institute and EPSRC to bring this new capability to the UK,” said Peter Ungaro, President and CEO of Cray Inc. “We have a common vision around the convergence of big data analytics and supercomputing to provide new capabilities that will allow companies and governments all around the world to leverage the unique capabilities of supercomputers to cost-effectively analyse the immense amount of data that is being generated today. This national project will have ties into Cray’s European R&D and analytics organisations using our unique supercomputing technologies as the basis of big data infrastructures now and in the future.”

“EPSRC is a stakeholder in both The Alan Turing Institute and the ARCHER system, which provides the largest supercomputer in the UK for scientific research,” said Philip Nelson, Chief Executive of EPSRC. “Both of these programmes aim to bring breakthrough research to the UK and with this close relationship we will transform our ARCHER supercomputer into the largest data analytics platform in the world, enabling huge breakthroughs in leveraging big data into the UK economy and catapulting the UK into a world leader in the data sciences.”

Cray has led the development of high performance analytics systems, first with the Cray Urika-GD, Cray’s unique graph discovery appliance, and more recently with the Cray Urika-XA system for advanced analytics. As part of the R&D work associated with this collaboration, similar high performance big data capabilities will be made available on the ARCHER supercomputer, a Cray XC30. With its 330 Terabytes of
memory and Cray’s high speed interconnect the ARCHER system will enable scientists to study problems whose data volume and complexity is beyond the capabilities of that possible today.

As part of the relationship, The Alan Turing Institute and Cray will work together with EPSRC on future technology requirements and on methodologies, algorithms, middleware and applications around data science to help co-design future generations of big data systems as well as providing a capability to increase the adoption of these technologies across industry partners and the various UK governmental agencies. Cray will extend the capabilities of its Centres of Excellence beyond supercomputing into Data Analytics as an extension of their current European R&D program headquartered in Bristol, UK.
Appendix 5

Call for Expressions of Interest in Early Career Research Positions at the Alan Turing Institute

The Alan Turing Institute is the UK’s national data science institute. It is headquartered at the British Library in London and its scientific programmes will begin in September 2015.

The Institute will soon be seeking applications from outstanding postdoctoral researchers across the globe to join them. The Institute is seeking to attract researchers at early stages in their careers who have the potential to lead the development of the new field of data science. They should be capable of drawing on mathematical sciences, computer science and engineering to develop the foundational theory, be excited by working in a multidisciplinary context to develop new applications, and be committed to their research being translated into societal and economic benefit.

The Institute wishes to attract the strongest and widest possible field of applicants to these posts in its inaugural year. Positions offered will be appropriate to the candidate’s experience and to the Institute’s aspirations. Prospective applicants are invited to submit a curriculum vitae and a one-page covering note explaining how their expertise is relevant to data science and the mission of the Institute via email to info@turing.ac.uk. Full details of the application procedure will be sent in the autumn to those who register their interest.
Appendix 6

Research at the Institute to Commence in the Autumn of 2015

During the autumn a series of summits for users of big data will be held at the founding partner universities. These summits are aimed at encouraging users to discuss the challenges they are encountering in dealing with big data and identifying high impact research areas for the Institute.

Provisional List of Data Summits

<table>
<thead>
<tr>
<th>Summit</th>
<th>Location</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data science for health</td>
<td>Cambridge</td>
<td>21 September</td>
</tr>
<tr>
<td>Summit for the citizen/customer-facing sectors</td>
<td>Oxford</td>
<td>16 September</td>
</tr>
<tr>
<td>Data science for media</td>
<td>Edinburgh</td>
<td>13 October</td>
</tr>
<tr>
<td>Financial summit</td>
<td>UCL</td>
<td>14 October</td>
</tr>
<tr>
<td>Data Analytics for credit risk</td>
<td>Edinburgh</td>
<td>29 October</td>
</tr>
<tr>
<td>Big data for small and medium-sized enterprises</td>
<td>Cambridge</td>
<td>16 November</td>
</tr>
<tr>
<td>High-value manufacturing</td>
<td>Warwick</td>
<td>tbc</td>
</tr>
<tr>
<td>Trust, identity, privacy and security</td>
<td>UCL</td>
<td>tbc</td>
</tr>
<tr>
<td>Big data for the physical sciences</td>
<td>UCL</td>
<td>tbc</td>
</tr>
<tr>
<td>Data science for physical systems and ubiquitous sensors</td>
<td>Edinburgh</td>
<td>tbc</td>
</tr>
<tr>
<td>Data science for government and policy</td>
<td>Oxford</td>
<td>tbc</td>
</tr>
</tbody>
</table>

Academic scoping workshops will also be held during the autumn to allow researchers in the mathematical, computational and social sciences to help identify major research themes for the Institute and to facilitate the submission to the Institute of research proposals for 2016 and subsequent years.
Appendix 7

Notes for editors

The Alan Turing Institute is a joint venture between the universities of Cambridge, Edinburgh, Oxford, Warwick, UCL and the Engineering and Physical Sciences Research Council (EPSRC). The Institute will promote the development and use of advanced mathematics, computer science, algorithms and big data for human benefit.

The Institute will bring together leaders in advanced mathematics and computing science from the five lead universities and other partners and will conduct first class research and development in an environment that brings together theory and practical application. It will build on the UK’s existing academic strengths and help position the country as a world leader in the analysis and application of big data and algorithm research.

The Institute is being funded over five years with £42 million from the UK government. The university partners are contributing £5 million each, totalling £25 million. In addition, the Institute will seek to partner with other business and government bodies. The creation of the Institute has been coordinated by the EPSRC which invests in research and postgraduate training across the UK.

The Institute will be based at the British Library at the heart of London’s Knowledge Quarter. Its work is expected to encompass a broad range of scientific disciplines and be relevant across multiple business sectors.

Big data refers to extremely large and complex sets of data.

Algorithms are the computer instructions used to analyse and manipulate data.

Data analytics is a set of mathematical techniques for analysing data.

Research on big data and algorithms is expected to revolutionise our ability to compare, cross-reference and analyse data in ways that have previously been beyond the bounds of human or computer analysis. It is expected that the resulting new techniques and competencies will eventually have a transformative effect on science, business, social media and the public sector.

The Lloyd’s Register Foundation is a UK charity that funds the advancement of engineering-related education and research and supports work that enhances safety of life at sea, on land and in the air. It is funded partly by the profits of its trading arm, Lloyd’s Register Group Limited, a global engineering, technical and business services organisation. Lloyd’s Register Foundation’s vision is to be known worldwide as a leading supporter of engineering-related research, training and education that makes a real difference in improving the safety of the critical infrastructure on which modern society relies. In support of this the Foundation promotes scientific excellence and acts as a catalyst working with others to achieve maximum impact. Further information is
available at www.lrfoundation.org.uk or from Mark Stokes, Group Communications Director, Corporate Communications, Lloyd’s Register Foundation, telephone: 020 7423 1725 or email: mark.stokes@lr.org.

For more on Cray Inc. see www.cray.com

GCHQ is one of the three UK intelligence agencies. Further information can be found at: www.gchq.gov.uk