The Artificial Intelligence SIG

'Challenges of AI: Ethics and Interpretability'

17th October 2018

Hosted by Amazon Cambridge Development Centre

The Artificial Intelligence SIG is championed by Laurent Brisedoux of **Amazon,** Phil Claridge of **Mandrel Systems**, Gunter Haberkorn of **Magna International** and Peter Whale of **Vision Formers**

Venue address: Amazon Cambridge Development Centre, 1 Station Square, Cambridge CB1 2GA

AGENDA

17:30	Registration
18:00	**CW** welcome and introduction to Artificial Intelligence SIG, **Bob Driver, CEO, CW**
18:05	Welcome from event sponsor, **David Paul, Director for Business Development, Magna International**
18:15	**Session chaired by Artificial Intelligence SIG Champion** **'Interpretability in Machine Learning'** **Tameem Adel Hesham, Postdoctoral Researcher, Leverhulme Centre for the Future of Intelligence** Interpretability is often considered crucial for enabling effective real-world deployment of intelligent systems. Unlike performance measures such as accuracy, objective measurement criteria for interpretability are difficult to identify. The volume of research on interpretability is rapidly growing. However, there is still little consensus on what interpretability is, how to measure and evaluate it, and how to control it. There is an urgent need for most of these issues to be rigorously defined and activated. One of the taxonomies of interpretability in ML includes global and local interpretability algorithms. The former aims at getting a general understanding of how the system is working as a whole, and at knowing what patterns are present in the data. On the other hand, local interpretability provides an explanation of a particular prediction or decision. Here, we shed light on issues related to interpretability, as well as state-of-the-art machine learning algorithms.
18:35	**Session chaired by Artificial Intelligence SIG Champion** **What do we need next in AI ethics?** **Jess Whittlestone, Postdoctoral Researcher, Leverhulme Centre for the Future of Intelligence** Interest in the ethical implications of AI has exploded in the past few years across many circles, including academia, industry, and policy. Various codes and commitments for the ethical development and use of AI have been established, all emphasising similar things: that AI-based technologies should be used for the benefit of all humanity; that they must respect certain widely-held values such as privacy, justice and autonomy; and that it is essential we develop AI systems to be intelligible to humans. While agreeing on these principles is valuable, it's still far from clear how we implement them in practice. What does it really mean to say that AI systems must be 'intelligible', or that they should preserve 'autonomy'? What should we do when these principles come into conflict with one another: how much privacy should we be willing to sacrifice in developing life-saving technologies, for example? In this session, Jess will highlight some of the dilemmas we still need to face in ensuring the ethical use of AI systems in practice. She will discuss what work is needed next in AI ethics to turn principles into practice, and how those working with specific applications of AI can help.
18:55	Q & A
19:10	Wrap-up by **Bob Driver, CEO, CW (Cambridge Wireless)**
19:15	**End of session followed by networking. Beer, pizza and soft drinks kindly provided by Magna**
20:30	**Event closes**

Profile of organisers

Cambridge Wireless (CW) @cambwireless
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 over 400 members 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 business developments and position their organisations in key market sectors. CW also organises major conferences and start-up competitions along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities. **www.cambridgewireless.co.uk**

Profile of host

Amazon
Amazon's innovative Cambridge, UK Development Center holds teams focused on three pioneering areas: Prime Air, Amazon Alexa, and Amazon Lab126 Devices. **www.amazon.com**

Profile of sponsor

Magna
Magna is a leading global automotive supplier with 327 manufacturing operations and 100 product development, engineering and sales centers in 29 countries. Magna has over 161,000 employees focused on delivering superior value to its customers through Innovation and World Class Manufacturing and Processes. At Magna, we take great ideas and develop them from invention to commercialization. We also know that great thinking happens outside our four walls, and that our ability to commercialise great ideas benefits inventors, founders, entrepreneurs, customers, and ultimately all who share the road. **www.magna.com**

Profile of Artificial Intelligence SIG Champions

Laurent Brisedoux, Amazon
Laurent Brisedoux has been heading the Amazon R&D team in Cambridge, part of the Lab126 organization, since its creation in 2014. His group is responsible for developing application, device and cloud software for Amazon's consumer electronic devices such as Kindle, Fire tablets, Fire TV, Dash, Echo and many more innovative products to come. Prior to that, Laurent was in charge of the development and productisation of imaging technologies at Broadcom, managing a group of 50 people across multiple locations worldwide. He joined the Broadcom Mobile Multimedia group in 2004 with the acquisition of Alphamosaic, one the Silicon Fen 'success stories'. Laurent is also a junior angel investor and working with several technology start-ups in the Cambridge area. **www.amazon.com**

Phil Claridge, Mandrel Systems @MandrelSystems
Phil Claridge is a 'virtual CTO' for hire within Mandrel Systems covering end-to-end systems. Currently having fun and helping others with large-scale AI systems integration, country-wide large scale big-data processing, hands-on IoT technology (from sensor hardware design, through LoRa integration to back end systems), and advanced city information modelling. Supporting companies with M&A 'exit readiness', due-diligence and on advisory boards. Past roles include: CTO, Chief Architect, Labs Director, and Technical Evangelist for Geneva/Convergys (telco), Arieso/Viavi (geolocation), and Madge (networking). Phil's early career was in electronics, and still finds it irresistible to swap from Powerpoint to a soldering iron and a compiler to produce proof-of-concepts when required. **www.mandrel.com**

Gunter Haberkorn, Magna
www.magna.com

Peter Whale, Peter Whale Consulting @Peter_Whale
Peter is a technologist and business leader, with a long track record of conceiving, developing and marketing successful technology-based solutions, which have touched the lives of many millions of people. Currently exploring transformative possibilities in AI, IoT and future connected devices. Peter is co-author of the 'Essentials of Mobile Handset Design', published by Cambridge University Press. Peter is a board member of Cambridge Wireless, and is a champion of the CW Artificial Intelligence SIG. **www.peterwhale.com**

Profile of speakers

Tameem Adel Hesham, Leverhulme Centre for the Future of Intelligence
Tameem Adel is a research fellow whose main research interests are machine learning and artificial intelligence, more specifically probabilistic graphical models, Bayesian learning and inference, medical applications of machine learning, deep learning and domain adaptation. He has also worked on developing transparent machine learning algorithms and on providing explanations of decisions taken by deep models. He has obtained his PhD from University of Waterloo in 2014, advised by Prof. Ali Ghodsi. After that, he was a postdoctoral researcher at the Amsterdam Machine Learning Lab, advised by Prof. Max Welling. **www.lcfi.ac.uk/**

Jess Whittlestone, Leverhulme Centre for the Future of Intelligence
Jess is a research associate focused on AI policy. She is particularly interested in how we can build appropriate levels of trust in AI systems amongst policymakers and the general public, and how to avoid harmful misperceptions of the capabilities and risks of AI. Jess has a PhD in Behavioural Science from the University of Warwick, and a first class degree in Mathematics and Philosophy from Oxford University. In her PhD, she argued that confirmation bias is not necessarily as "irrational" as it seems, with implications for how we think about the strengths and weaknesses of human reasoning. Previously, Jess worked for the Behavioural Insights Team, where she advised various government departments on improving their use of behavioural science, evidence, and evaluation methods, with a particular focus on foreign policy and security. She has also worked as a freelance journalist and has had her writing published in Aeon, Quartz, and Vox. **www.lcfi.ac.uk/**