Artificial Intelligence & Mobility - The Business Implication

Thursday 11th May 2017

Sponsored by Magna, ARM and BP Ventures

This event is being curated by **James Chapman of Qualcomm, Phil Claridge of Mandrel Systems Ltd, Peter Whale of Iotic Labs, Laurent Brisedoux & Neil Lawrence of Amazon**

Venue: Granta Centre, Granta Park, Great Abington, Cambridge, CB21 6AL

AGENDA	
09:00	Registration and networking with refreshments
09.30	CW Welcome from our sponsors Magna, ARM and BP Ventures
09:45	Introduction to Artificial Intelligence & Mobility from the pilot SIG Champions
09:55	**AI – what it is, …and what it isn't** Session chaired by **James Chapman, Qualcomm** **'Overview of the Landscape'** **Pilar Manchón, Director, Cognitive Interfaces, Amazon** **'Beyond Machine Learning to Artificial Intelligence'** **Professor Andrew Blake, Director, Alan Turing Institute @turinginst** **'Five things you should know about Artificial Intelligence'** **Monty Barlow, Director of Machine Learning, Cambridge Consultants @CambConsultants** Panel discussion
11:00	Refreshment break and networking
11:30	**Use Cases – enabled by AI** Session chaired by **Phil Claridge, Mandrel Systems Ltd** **'The Role of AI in Mobility'** **Ian Simmons VP R&D; Dr Boris Shulkin, VP R&D, Magna @MagnaInt** **'The Role of AI in consumer and industrial electronic-based products'** **Chris Turner, Director of Advanced Technology Marketing, ARM @ARMHoldings** **'The Role of AI in Pharma / Healthcare'** **Claus Bendtsen, Head of Quantitative Biology, AstraZeneca @AstraZenca** Panel discussion
12:45	**'The Creation of a CW Artificial Intelligence SIG'** Session chaired by **Phil Claridge, Mandrel Systems Ltd**
12:55	Lunch and networking
13:55	**AI Innovation through start-ups – what are the opportunities and challenges?** Session chaired by **Laurent Brisedoux, Amazon** **Session Introduction** **Jon Salkeld, Technology Director, Mobility, Castrol innoVentures, BP @BP_plc** and **Ian Simmons, VP R&D, Magna @MagnaInt** • **Owen McCormack, CEO, Hoxton Analytics @hoxtonanalytics** • **Stan Boland, CEO, FiveAI @_FiveAI** • **Vishal Chatrath, CEO, Prowler.io @prowler_io** • **Ingmar Posner, Co-Founder, Oxbotica @oxbotica** Q&A
15:30	**Engaging with innovative start-ups** Showcase presentations and informal networking with refreshments
17:30	**Event closes**

Profile of organisers

Cambridge Wireless (CW)
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 19 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 sponsors

Magna
Magna is a leading global automotive supplier with 312 manufacturing operations and 93 product development, engineering and sales centres in 29 countries. Magna has over 155,000 employees focused on delivering superior value to its customers through innovative processes and World Class Manufacturing. At Magna, we take great ideas and develop them from innovation to industry standard. We also know that great thinking happens outside our four walls, and that our ability to commercialise great ideas benefits inventors, entrepreneurs, customers, and ultimately all who share the road. **www.magna.com**

ARM
ARM® technology is at the heart of a computing and connectivity revolution that is transforming the way people live and businesses operate. Every day more than 45 million ARM-based chips are shipped by our partners into products that enhance the human experience; connecting people, improving lives and making the impossible possible. From the sensor to the cloud and all points in between, ARM is shaping the smart connected world. **www.arm.com**

BP Ventures
BP Ventures identifies and invests in private, high growth, game-changing technology companies, accelerating cutting edge innovations across the entire energy spectrum. The Investment portfolio is primarily focused on emerging technologies in oil and gas exploration and production and downstream conversion processes. BP Ventures also partners with entrepreneurial companies specialising in biotech, water, advanced materials, and digital technology. **www.bp.com**

Profile of Event Curators

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.co.uk**

James Chapman, Qualcomm
James is Qualcomm's VP responsible for its roadmap of Voice & Music products. Before joining Qualcomm as part of the acquisition of CSR, he was responsible for CSR's connectivity product line. Prior to CSR James has held senior software management roles at Broadcom; he was also the Head of Research for TTP Communications. James' 20 years in the high-tech industry started with a degree and PhD in theoretical Condensed Matter Physics from the University of Oxford. **www.qualcomm.com**

Phil Claridge, Mandrel Systems Ltd

Phil Claridge is currently having fun, with Mandrel, hands-on with IoT technology. This includes LoRa, back-end AI, Spark big data, and advanced city information modelling. Past roles include: CTO, Chief Architect, Labs Director, and even Technical Evangelist for companies including: Geneva, Arieso/Viavi, Convergys and Madge. Phil Claridge is a practical large scale software/systems/data architect (including massive big-data geolocation and carrier charging systems), who understands the strategic and commercial value of big software systems, and influences all levels in an organisation. Phil also has a great deal of M&A and IPR experience. Phil's early career was in electronics, and still finds it irresistible to swap from Powerpoint to a soldering iron. **www.mandrel.com**

Neil Lawrence, Amazon / University of Sheffield

Neil is the Director of Machine Learning at Amazon in Cambridge (UK) and Professor of Machine Learning at the University of Sheffield. Neil's main research interest is probabilistic models, he focuses on data efficient learning, privacy aware learning and uncertainty quantification. **www.amazon.co.uk**

Peter Whale, Iotic Labs

Peter is Chief Operating Officer for Iotic Labs, provider of Iotic Space, enabling the true Internet with Things in it. Peter was previously with Qualcomm, where he led innovation and product commercialisation of IP in machine learning. Blending this diverse expertise, Peter is developing opportunities which utilise the co-existence of IoT and AI as enablers of future services. **www.iotic-labs.co.uk**

Profile of speakers

Monty Barlow, Director of Machine Learning, Cambridge Consultants @CambConsultants

Monty Barlow leads the machine learning capability at Cambridge Consultants, with a particular focus on the practical application of artificial intelligence to industrial problems. Throughout his career he has sought challenges which require high performance computation and algorithms to solve, in diverse domains such as telecommunications, security, transport and healthcare. In 2014, he founded a research lab within Cambridge Consultants to develop and industrialise deep learning technology for client programmes. **www.cambridgeconsultants.com**

Claus Bendtsen, Head of Quantitative Biology, AstraZeneca @AstraZenca

Claus Bendtsen heads Quantitative Biology as part of Discovery Sciences within AstraZeneca. His department provides global support in areas of informatics, mathematical modelling, image analytics and non-clinical statistics. Prior to joining AstraZeneca he held positions at Novartis and Merck & Co. Earlier in his career he co-founded three start-ups and worked in academia. He holds a Ph.D. in applied mathematics and an MBA. **www.astrazeneca.co.uk**

Professor Andrew Blake, Director, Alan Turing Institute @turinginst

Professor Andrew Blake is Director of the Alan Turing Institute. Prior to joining the institute in 2015, Professor Blake held the position of Microsoft Distinguished Scientist and Laboratory Director of Microsoft Research Cambridge, England. He joined Microsoft in 1999 as a Senior Researcher to found the Computer Vision group. In 2008 he became a Deputy Managing Director at the lab, before assuming the directorship in 2010. Before joining Microsoft Andrew trained in mathematics and electrical engineering in Cambridge England, and studied for a doctorate in Artificial Intelligence in Edinburgh. He was an academic for 18 years, latterly on the faculty at Oxford University, where he was a pioneer in the development of the theory and algorithms that can make it possible for computers to behave as seeing machines. **www.turing.ac.uk**

Stan Boland, CEO, FiveAI @_FiveAI

Stan Boland co-founded and was CEO of two VC-backed communications silicon and software companies, Element 14 Inc. and Icera Inc., one bought by Broadcom and the other by NVIDIA, for an aggregate value of over $1 billion. Before that he was CEO at computer pioneer Acorn and a BoD member at its then associate ARM. His early career includes spells at Rolls-Royce and ICL (now Fujitsu Services). He is a graduate in Physics from the University of Cambridge. **www.five.ai**

Vishal Chatrath, CEO, Prowler.io @vishalchatrath / @prowler_io

PROWLER.io CEO and co-founder Vishal Chatrath was the first employee and management team member of VocalIQ, a speech-related AI company which was acquired by Apple in 2015. Prior to VocalIQ he founded Chleon Automotive, an auto telematics company and also led Nokia's automotive team which developed MirrorLink, an open technology standard for connecting smartphones and cars. **www.prowler.io**

Pilar Manchón, Director, Cognitive Interfaces, Amazon

Pilar Manchon holds a degree in English Philology, a MSc. in Cognitive Science and Natural Language, a MBI, and a European PhD in Computational Linguistics. She was the CEO and founder of Intelligent Dialogue Systems (INDISYS), a Spain-based AI company that developed human-like multimodal conversational agents that helped organizations provide excellent services and customer care to millions of users. After several rounds of funding and an incipient internationalization strategy, the Indisys was acquired by Intel in 2013. She was then asked to join the Intel leadership team in California, and later on became the Sr. Director of Voice and Digital Assistance in the Client Computing Group at Intel's headquarters. Pilar is now the Director of Cognitive Interfaces in the Machine Learning group at AWS, Amazon. **www.amazon.co.uk**

Owen McCormack, CEO, Hoxton Analytics @hoxtonanalytics

Owen is a data scientist with a background in finance. His passion for new ideas and innovation led him to set up Hoxton Analytics whilst studying at UCL in 2014. Prior to that, he worked in finance and earned his CFA charter holder status whilst valuing equities at PwC. **www.hoxtonanalytics.com**

Ingmar Posner, Co-Founder, Oxbotica @oxbotica

Ingmar is a founder of Oxbotica, a leading provider of mobile autonomy software solutions which underpin a variety of public and commercial autonomous vehicle programmes such as the LUTZ and GATEWay projects in the UK. As well as his role with Oxbotica, Ingmar holds an Associate Professorship in Engineering Science at the University of Oxford where he serves as deputy director of the Oxford Robotics Institute and heads up the Applied AI Lab specialising in machine learning solutions for robot perception and decision making. **www.oxbotica.com**

Jon Salkeld, Technology Director, Mobility, Castrol innoVentures, BP @BP_plc

Jon is Technology Director for BP's Mobility Taskforce. He joined BP in 2011, initially as Global Product Development Director for Automotive Lubricants, before moving to head up technology for the step out innovation unit Castrol innoVentures. A specialist in the commercialisation of disruptive innovation, he previously held senior business, strategy & technology leadership positions at QinetiQ & ICI, with earlier experience at Schlumberger. **www.bp.com**

Dr Boris Shulkin, VP R&D, Magna @MagnaInt

Boris Shulkin leads Magna's activities in technology incubation, product strategy, technical due diligence and intellectual property assessment of new technologies and high-tech start-ups. He holds multiple academic degrees and patents, has more than two decades of experience in the automotive industry, and has been with Magna since 2003. **www.magna.com**

Ian Simmons, VP R&D, Magna @MagnaInt

Ian Simmons focuses on validating innovation opportunities for Magna, along with developing cooperative relationships with customers as well as corporate venture groups, government agencies, educational communities and other research institutions. He also manages outside investment in partner-technology companies to commercialize inventions for the Magna product groups. Ian has been with Magna since 2003 and has worked in Europe and North America during his 30-plus years in automotive. **www.magna.com**

Chris Turner, Director of Advanced Technology Marketing, ARM @ARMHoldings

Chris Turner is the director of advanced technology marketing in ARM's compute products group where he plans the introduction of new technology to ARM Cortex processors with associated partnership and ecosystem initiatives. Chris has more than 30 years of experience in communications, computing software and semiconductors gained from a range of executive, business and technical management positions at Cambridge Consultants, Virata Corp, Olivetti Research, Acorn Computers and Philips. At ARM, his interests include autonomous driving, computer vision, machine learning, functional safety and 5G mobile communications. Chris is a Chartered Engineer, registered European Engineer (Eur Ing) and a Fellow of the IET. **www.arm.com**

Profile of Exhibiting Start-Ups

6Estates @6Estates

6Estates was founded by data scientists and tech entrepreneurs to solve real world challenges presented by the explosion of data on different digital platforms. Building upon years of research on big data analytics from NExT, a research centre established between National University of Singapore (NUS) and Tsinghua University of China, 6Estates develops state-of-the-art tools that can gather, analyse and predict digital signals about organisations, products, brands, people, location and events, to deliver real-time, deep intelligence to businesses to enable critical and time-sensitive decision making on marketing, product development, manufacturing and customer service. **www.6estates.com**

API Cognition

API Cognition has a solution to the problem of artificial general intelligence. Our goal is to produce a "brain-in-a-box." This technology has been under continuous development since 1999. A breakthrough in the winter of 2014 culminated in the formulation of a biologically inspired whole-brain model. Since then, work has concentrated on the details of software implementation (with patents currently pending). We are currently developing a prototype for demonstration purposes. Once completed, we anticipate actively seeking investment funding and technology partners. Preliminary product plans extend across multiple industries, including; healthcare, software engineering, computer graphics, and simulation. **www.api-cognition.com**

Bodytrak® **@Bodytrak_Core**

Bodytrak® is the next generation in wearable technology. Bodytrak provides precision physiology monitoring in a compact earpiece with automated real-time data along with machine learning and intelligent algorithms to give unrivalled insights to enable marginal gains as well as early intervention to reduce risk and associated insurance premiums. It is the only device able to measure core body temperature unobtrusively and as accurately as medical devices. This provides significant advances in the monitoring of elite athletes, industrial workforces, fire fighters, soldiers and patients. The enterprise focused model will be monetised through a subscription PaaS model via direct and partner channels. **www.bodytrak.co**

Conigital Group

Conigital are transport infrastructure integrators developing Mobility-as-a-Service (MaaS) platforms, IoT sensors and Artificial Intelligence (AI) solutions for smart cities and the CAV market, lead partner in the Midlands Connected Autonomous Vehicle cluster (MCAV) and a partner on Project INSIGHT, a £2.2 million project to develop driverless shuttles with advanced sensors and to trial them in Birmingham. **www.conigital.com**

dividiti @dividiti

We are a 2-yo Cambridge-based start-up, working on optimising AI compute requirements with a number of clients. For example, we are helping General Motors to optimise deep learning for autonomous driving, setting ourselves a hefty goal to reduce the cost and power consumption by at least three orders of magnitude compared with where the industry is today (>10K\$, >1KW). This mandates exploring all opportunities across the whole SW/HW stack: from models and algorithms at the top to compute libraries and processors at the bottom. **dividiti.com**

Galaxy.AI @AIgalaxy

Galaxy.AI has been featured in INC magazine as one of the most promising AI start-ups for 2017 and is a Techstars NY alumni company. Galaxy.AI has built an artificial intelligence solution for mobility/casualty insurance sector. The vehicle insurance solution, Galacticar, analyzes damaged vehicle images and estimates claims cost. Galacticar increases efficiency of claims adjusters by triaging claims and automating claims processing of low to medium-intensity damage claims. These images are submitted directly through a mobile application which advises a range of claims cost as well as whether a claim should be filed or not. Galaxy.AI is working with top global casualty insurance companies. **www.galaxy.ai**

illumr @illumr

illumr is a portfolio company within Founders Factory's AI Accelerator. It is a deep-tech enterprise data analytics application using a proprietary methodology based on complex self-organising systems. Drawn from over a decades' worth of academic research, it has been shown to derive hypothesis-free insights that existing analytics tools are blind to. The pilot-version of the product has successfully delivered unique insights to enterprise partners, estimated to drive millions in cost savings. illumr is able to provide references from enterprises who will be willing to buy the product once it is in production (expected within six months). It is currently fund raising. **www.illumr.com**

Motion Robotics

Motion Robotics is based in the United Kingdom and Switzerland. The design team follows an intense research and development program directed at bipedal humanoid, wheeled, social and aerial robotics. As robots become consumer products, Motion Robotics anticipates that this revolution will be driven further by advances by AI. Motion Robotics aims to provide the robots and specialist AI vendors will add their specialist technology embedded into our platforms or remotely via Cloud interfaces. Currently we are developing social, assistive robotics for the elderly, bipedal safe agile robots for domestic applications, aerial robotics for humanitarian deployment and exoskeletons for SCI victims. **www.motion-robotics.co.uk**

Myrtle Software @MyrtleSoftware

Myrtle has been working on efficient hardware based deep learning technologies for a global auto maker and has contracts to further this work with the Ministry of Defence. We are a key partner in a major collaboration into the verification of deep learning for on-road vehicles. Our work focuses on automatically realizing deep learning algorithms as efficient silicon designs, capable of very high performance and low power usage. Our unique approach produces bespoke designs for specific networks and is scalable in terms of the resources that can be targeted: an important factor in commercial applications where running multiple neural networks together is becoming common. **www.myrtlesoftware.com**

Opening.io @openingdublin

Opening is an AI engine to augment recruitment: algorithm powered search & insights that work on large amounts of data - complete resume parsing and analysis at scale (from .doc/.pdf resume files), talent discovery/re-discovery (identifying most qualified candidates for any given role), resume understanding and capacity planning for the corporate HR sector - automation, speed and accuracy that trumps human capability. Robot recruiters that free up time, save money & re-engineer processes for recruiters, employers and job platforms alike. **opening.io**

Razor Secure @razorsecure

RazorSecure offers an advanced cyber-security solution designed to monitor, detect, report and protect critical infrastructure systems from hackers. RazorSecure's software provides real time alerts about breaches as they occur, providing an easy to manage and install breach detection system for critical infrastructure. By monitoring behavioural patterns, using machine learning and focusing on the integrity of services, RazorSecure can take instant action and provide alerts when a breach is occurring. Ensuring that breaches can be dealt with in minutes not months. **www.razorsecure.com**

Satalia @SataliaSolves

Satalia is a rapidly growing UK company that is becoming globally recognized in providing AI solutions for industry. With a specialism in Supply chain, logistics and Retail, Satalia co-creates solutions that utilize cutting-edge techniques in machine learning, data-science, optimisation and Artificial Intelligence. Satalia is a spin-out of UCL and is recognized as a Gartner Cool vendor in Data-Science. **www.satalia.com**

Seldon @seldon_io

Organisations want to build one-to-one relationships with customers and make better decisions. But skilled data scientists are in short supply, and building and maintaining machine learning infrastructure takes resource away from building better models. Seldon is an open-source machine learning deployment platform. It includes a containerised data science infrastructure stack with an optimisation engine that helps your team innovate faster. You keep full ownership and control of your data and models on-premise or in the cloud. **www.seldon.io**

Titan Reality™ @TitanReality

Titan Reality™ is a company developing leading-edge 3D sensing and control with Artificial Intelligence. The technology can control almost anything, replacing sensors and cameras in a fast growing £101Bn sensor market. Giving vision intelligence to industrial robots, mixing music in 3D audio, making digital musical instruments more expressive, controlling light and lasers intuitively, making automotive safer, augmenting healthcare, the technology has control and sensing applications in all sectors of industry. **www.titanreality.com**

velmai

Incorporated in 2012 to protect its Intellectual Property, the proprietary algorithm VAIP [Virtual Artificially Intelligent Patois]. Since 2013 this British chatbot developer with AI elements in its code has been monitored by S&P/Bloomberg, Gartner & VentureRadar which ranks it ca 75% for "Innovation & Growth Signals". Its source code has been developed inhouse by the programmer Darren Lee who has been an ICT executive for NOKIA & then the French multinational ATOS. The go-to market and monetisation strategies have been driven by Dr Tania Peitzker, now in the UK after 20 years in Berlin, who has become an expert in AI bot technology & its Use Cases. **www.velmai.com**

Xee @Xee_FR

A connected cars platform to develop mobility services. **www.xee.com**