



INTELLIGENCE18

AI IN HEALTHCARE

Intelligence 18 will be a one day Summit filled with panel discussions, plenary sessions, breakout streams and plenty of opportunity for you to connect with service providers and AI professionals. Below is a jam-packed schedule of what you will experience.

7:00am - 9:00am Registrations Open

7:30am – 8:45am Breakfast Session

Beyond Superhuman, Technology for Humanity

Doctor Jordan Nguyen, Inventor, Futurist and Biomedical Engineer

With today's staggering advances in technology, many new possibilities are emerging which almost seem to have come straight out of the realms of sci-fi fantasy. When we connect some of the dots between various cutting-edge fields, the innovations become even more intriguing. In this presentation, Biomedical engineer Dr Jordan Nguyen will raise an incredibly interesting and perhaps confronting conversation around links drawn between the fields of artificial intelligence, virtual reality, new techniques in 3D human scanning, neuroscience, and the ideas of human consciousness. This topic raises a number of questions about what it is to be human and what is a moral approach to the incredible things we can achieve today with the latest advancements in technology – advancements that are increasingly blurring the lines between the virtual world and the real world.

9:00am - 9:05am Welcome Address **Doctor Lance Lawler, President, RANZCR**

9:05am – 9:40am Opening Plenary Session - Combined session

Will you conquer digital disruption, or will it conquer you?

Professor Hugh Bradlow, President Australian Academy Technology and Engineering

For virtually any business, this presentation illustrates why their business needs to undergo digital transformation or die. It covers the key technologies that underpin the digital platforms that are driving change in the 21st century: the Internet, Fixed and Mobile Broadband, Cloud services, the Internet of Things, Big Data, Artificial Intelligence, high performance computing, blockchain. It also addresses caveats such as cyber security. It then examines how these technologies will reshape different industries, including health, transport, retail, agriculture, energy, smart cities, law enforcement, education, finance. While this presentation covers a very wide space, it is adapted and tailored to the audience and the industry.

9:40am - 10:20am Plenary Session – Combined session

Solving AI's Privacy Problem

Assistant Professor Yves-Alexandre de Montjoye, Lecturer Academy of London (UK)

We're living at a time when information about most of our movements and actions are collected in real time and used by machine learning algorithms. Large-scale datasets dramatically increase our capacity to measure and understand individuals and collectives for good. The collection and use of this data, however, raise legitimate privacy and ethical concerns. In this talk, Yves-Alexandre will discuss how traditional data protection mechanisms fail to protect people's privacy in the age of big data. He will also present solutions that, moving forward, will allow us to use data at scale while truly protecting people's privacy.

10:20am - 10:30am Question & Answer with **Professor Hugh Bradlow, President Australian Academy of Technology and Engineering** and **Assistant Professor Yves-Alexandre de Montjoye, Lecturer Academy of London (UK)**

Before breaking for morning tea, we will have an opportunity to take advantage of the high calibre of leadership with a chance to have two-three questions asked and discussed between Prof Bradlow and Assist. Prof de Montjoye.

10:30am – 11:00am Morning Tea

11:00am – 12:30pm Breakout Stream One Government, Policy and Ethics (2 x 45 min sessions)

Session 1 - A presentation with *Shane Porter, Assistant Secretary, Health Analytics Branch, Health Economics and Research Division, Australian Government, Department of Health*

The Department of Health uses a range of analytics on administrative datasets to enhance policy decision making. These projects are diverse and cover a wide range of methods, including using visualisation tools to make analytics more accessible, clustering techniques to group similar patient journeys and the use of artificial neural networks to conceptually embed medical codes. This presentation will cover these projects and also touch on the future directions of the Department in using advanced machine learning and artificial intelligence techniques on different datasets.

Session 2 - Adopting and trusting AI through Standards

Dr Jed Horner, Policy Manager, Standards Australia

AI continues to push the boundaries of what's possible. It elicits excitement, fear, hope and uncertainty. There is a timely discussion taking place on the role of regulation and ethical frameworks in shaping our response to AI, including at a national level, but what role can, and should, standards play? This presentation will provide a background on what Australian and International Standards are, how they currently work for citizen-consumers in the broader healthcare arena and what role they might play in establishing a common framework for managing the impact of AI, so that its full benefits can be realised.

11:00am – 12:30pm Breakout Stream Two Big Data and Deep Learning (2 x 45 min sessions)

Session 1 - A special presentation with *GE Healthcare*

Session 2 - Healthcare and Google Cloud, The journey towards an AI first approach

Win Woo, Solutions Architect, Google Cloud

Google Cloud's goal for healthcare is reflective of Google's overall mission: to organise the world's information and make it universally accessible and useful. Applying this mission to healthcare means using open standards to enable data sharing and interactive collaboration on a secure platform. Ultimately, we hope that better flow of data will inspire new discoveries with artificial intelligence (AI) and machine learning (ML), leading to insights that improve patient outcomes. In this session you will learn more about Google AI's research in healthcare and biosciences, with a focus on medical imaging. Beyond the research, we will explore the technology requirements for scaling digital health capabilities and how cloud is uniquely placed to solve these challenges. Building on cloud services for secure patient data management, we will explore practical AI examples for radiology using Google Cloud technologies.

12:30pm – 14:00pm Extended Lunch Break

12:45pm – 13:30pm Lunch Panel Discussion Presented by *GE Healthcare*

Taking advantage of an extended lunch, this panel discussion will provide an opportunity to hear from experts within AI in Healthcare and the measured conversations that need to be factored around policy, security, framework and ethics. Collect your lunch from the Expo area and head into the ballroom for this exciting discussion.

14:00pm – 15:30pm Breakout Stream One Government, Policy and Ethics (2 x 45 min sessions)

Session 1 - An update on Australia's National Digital Health Strategy

Professor Meredith Makeham, Chief Medical Officer, Australian Digital Health Agency

Australian Digital Health Agency Chief Medical Adviser Professor Meredith Makeham will discuss the Agency's work to improve health outcomes for all Australians through the delivery of digital healthcare systems, and through the implementation of [Australia's National Digital Health Strategy](#) – Safe, Seamless, and Secure: evolving health and care to meet the needs of modern Australia. The strategy is the product of detailed consultation and co-production with patients, consumers and carers – and the healthcare professionals, industry, organisations and innovators who serve them. It draws on evidence of clinical and economic benefit from many sources within Australia and overseas.

Professor Makeham will also discuss the Agency's work as the System Operator of [My Health Record](#), which is currently being expanded using an opt-out participation model for all Australians, unless they choose not to have one. A key Agency priority is the connection of pathology and diagnostic imaging services to My Health Record. This will support healthcare providers in accessing information they need to make better informed clinical decisions with their patients. Professor Makeham will also discuss the evidence of broader benefits of the My Health Record system for people and the healthcare system, and the evaluation approach at the Australian Digital Health Agency to the measurement of these benefits.

Session 2 - this session will be confirmed shortly.

14:00pm – 15:30pm Breakout Stream Two Big Data and Deep Learning (2 x 45 min sessions)

Session 1 - Why artificial intelligence has not revolutionised healthcare... yet

Dr Olivier Salvado, Head of Imaging and Computer Vision, Data61 (CSIRO)

The amount of medical data is fast increasing through new technological development that can scan our body with ever more resolution, measure rapidly metabolites from body fluid, or identify our genetics code at a cost low enough to be considered for routine examination. AI technologies, and more specifically Machine Learning, are well suited for the task of identifying patterns in those vast databases to screen and diagnose diseases, prevent errors, or improve the productivity of our health system. Yet, the deployment of AI technologies for health is lagging other areas while some recent drawbacks have been reported in the press. Medical applications present particular challenges for AI and this talk will describe a few of those as well as recent advances to address them.

Session 2 - AI and the diagnostic pathway of tomorrow and what is being done today.

Doctor Elliott Smith, CEO, Maxwell Plus

AI has become a headline in many areas of medicine including radiology. It has become a popular area of both research and has led to the founding of many companies. Messages in the media span from a dismissal of AI to worries about the future of clinical jobs. Elliot will discuss the ways AI may play a role in the diagnostic pathway of tomorrow and what is being done today. The talk will explore where AI misses the mark and the need for continuous clinical engagement in the development of AI for medicine and ultimately the spaces where clinicians and AI will compliment each other to improve patient outcomes.

15:30pm – 16:00pm Afternoon Tea

16:00pm – 17:30pm Closing Plenary and Panel Discussion - combined

In this combined plenary session, Professor Enrico Coiera will deliver a summary of the many discussions that have taken place at Intelligence18, before being joined by a panel of experts to unpack what's next for AI in the healthcare sector and where the immediate focus should be in the future. Plenty of opportunity will be provided for questions from the audience.

Moderated by:

Professor Enrico Coiera, Faculty of Medicine and Health Sciences, Macquarie University, NSW

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Panellists include:

- **Doctor Olivier Salvado**, Head of Imaging and Computer Vision, Data61 (CSIRO)
- **Doctor Luke Oakden-Rayner**, FRANZCR, University of Adelaide
- And more to be announced shortly

17:30pm – 19:30pm Networking Drinks Presented by Macquarie Bank

With acoustic entertainment featuring Miss Veronika Lawson

7.5 RANZCR CPD points can be claimed for attendance at the Intelligence18, AI Healthcare Summit.

*Please note this program is subject to change.

