

Data Science in the News

Webinar: Data Science in the News - headline edition

*Friday 16 October 2020
12pm - 1pm*

Moderator

Professor David Lovell - Deputy Director, QUT Centre for Data Science and Professor, QUT School of Computer Science

Our panelists

- Professor Margot Brereton - Director of Research Performance, QUT Institute for Futures Environment; Program Leader, Data Focussed Decision Making Research Program, QUT Centre for Data Science
- Dr Simon Denman - Senior Lecturer, QUT School of Electrical Engineering and Robotics; Program Leader, Applied Data Science Research Program, QUT Centre for Data Science
- Professor Moe Thandar Wynn - Professor, QUT School of Information Systems; Program Leader, Data for Discovery Research Program, QUT Centre for Data Science
- Professor Matthew Simpson - Professor, QUT School of Computer Science; Program Leader. Models and Algorithms Research Program, QUT Centre for Data Science.

Panel topics

Creating fake data: Deep learning techniques have achieved huge success in the many machine learning domains and have helped increase the awareness and interest in machine learning and data science. One area attracting increasing attention is using deep learning techniques to create "fake" data. While this has several innocent uses, such as generating additional training samples or providing tools to retouch photos, it also a number of nefarious uses including the creation of deep fakes and spreading mis-information through text generation. In this talk, I will briefly outline some of the techniques used to create fake data, and provide some examples demonstrating the level of realism that is possible.

Trust the process...can we? Process mining will give you an X-ray vision of your processes! Processes today are supported by digital technologies which keep detailed records of when tasks are completed and who completed them. These records can then be analysed using process-oriented data mining (process mining) techniques to show how your processes are REALLY performing and pinpoint areas for efficiency gains. In this talk, I will share how process mining techniques can be used by organisations to unearth the real behaviour of processes.

Our moderator and panellists

Professor David Lovell is a Professor in the QUT's School of Computer Science, Deputy Director of QUT's Centre for Data Science, and leader of the Centre's Data-Focused Decision-Making Program. David's research interests lie at the intersection of humanity, science and technology, particularly data science. We

humans are the ones who stand to benefit (or suffer) from systems that use data to make or inform decisions that affect our lives. David wants to ensure that science and technology are developed, designed and delivered with this in mind so that our world is better as a result.

Professor Margot Brereton is a national and international leader in the collaborative design (co-design) of new humanitarian technologies and their interfaces. She designs to support real user communities in selected challenging contexts, with a particular focus on agency and better futures for older people and people with intellectual disabilities. She also designs technologies to connect people to nature and to support the use of endangered indigenous languages. Margot and her team's prototypes are deployed and evolved over significant periods of time (6 months to years) within communities. Margot began her career as an apprentice at Rolls Royce aircraft engines and holds a PhD in Mechanical Engineering Design from Stanford University.

Dr Simon Denman received a BEng (Electrical), BIT, and PhD in the area of object tracking from the Queensland University of Technology (QUT) in Brisbane, Australia. He is currently a Senior Lecturer within the School of Electrical Engineering and Robotics at QUT, and is co-leader of the Applied Data Science programme in the QUT Centre for Data Science. His active areas of research include deep machine learning and its applications to computer vision and signal processing.

Professor Moe Thandar Wynn is a leading researcher in the field of Business Process Management (BPM) and is one of the steering committee members of the IEEE Taskforce on Process Mining. She has over ten years of experience in engaging with Australian industry partners to improve business practices through data-driven methods. Her ongoing research focuses on process-oriented data mining (process mining), data quality and robotic process automation for the digital transformation of processes. She will share her views on how process mining techniques can be used by organisations to gain insights into the real behaviour of their processes.

Professor Matthew Simpson is Professor of Mathematics at Queensland University of Technology and Deputy Director of the Australian Mathematical Sciences Institute. His primary area of expertise is the use of computational techniques for solving differential equations and studying interacting random walk models. Using computation, together with a range of techniques from applied mathematics, he studies several physical and biological processes. In 2012 he was awarded the JH Michell Medal for excellence in research by ANZIAM (Australian and New Zealand Industrial and Applied Mathematics), a division of the Australian Mathematical Society. In 2020 he was awarded the EO Tuck for outstanding research and distinguished service by ANZIAM.