



UNSW
SYDNEY



Clinical Machine Learning

Digitalisation of healthcare gives a unique opportunity to leverage information to help patients and clinicians choose the best care pathways. The design, development and evaluation of technology that uses large repositories of routinely collected data, supports the making of safe and optimal clinical decisions for individual patients.

Competitive advantage

- Working at the intersection of medicine and computing, bringing together doctors, pharmacists, mathematicians, software engineers and computer scientists
- State-of-the-art technologies and the use of large clinical practice datasets
- Fully validated solutions and technology that is cost-effective and safe
- Ability to understand clinical decision making and the challenges in translating machine learning techniques into clinical practice

Impact

- Reduction of unnecessary hospitalisations and ICU admissions through timely and accurate identification of patients at risk
- Personalised, safer and more effective healthcare delivery through identification of what works best, and for which patients

Successful outcomes

- A 'watch list' tool to automatically populate list of patients at high risk of deterioration to prevent unnecessary ICU admissions
- Tool to standardise the names of the structures delineated in radiotherapy plans to enable big data analyses in cancer care
- A suite of algorithms to estimate heterogeneity of treatment effects from large routinely collected datasets

Capabilities and facilities

- A secure, customisable cloud computing infrastructure certified in accordance with the Privacy Security Assurance Framework, which allows the use of high-computing resources on sensitive or confidential data
- Access to big medical data from Australia, UK and US
- Expertise on state-of-the-art computational statistics including deep learning, interpretable machine learning and causal inference algorithms

Our partners

- Prince of Wales Hospital, Sydney
- St Vincent's Hospital, Sydney
- Northern Sydney Cancer Centre
- e-Health NSW

More Information

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- The University of Oxford