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X-roads of Imaging and Data Science: Projects to Accelerate Imaging

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Medical research is increasingly dependent on the ability to capture, store, process, integrate, and analyse large volumes of data. Moreover, in the foreseeable future, the size of research studies will continue to increase, and the overarching driver is to improve research quality and to increase reproducibility. Large-scale studies require a step change in the way that data is treated.

The opportunities are accelerating with the common introduction of ML methods, such as convolutional neural networks, the information that can be quantitatively gathered from images will increase, and thus so will the value of imaging within the research lifecycle. ML-based image analysis can extract more information, with less human intervention, across larger study sizes.

This presentation will provide an overview of a number of Australian research infrastructure initiatives that attempt to bridge the gap between the instrument and computing capability, by providing imaging users with accessible, powerful and easy-to-use environments. I will present initiatives to integrate instruments, manage imaging research data at a national scale, provide crucial data analysis skills and accelerate the adoption of standards and machine learning techniques across areas such as structural biology and neuroimaging, and I will provide an overview of future data strategy being developed across the National Imaging Facility.

I want to give an oral presentation.

I want to present a poster.

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