Understanding and creating instrument generated data collections

This project will develop an understanding of the best strategies to leverage the significant data repositories that manage instrument data.

Australian Universities have invested significantly in shared scientific instruments, from light and electron microscopes (EM) to genomic sequencers and, magnetic resonance imaging (MRI), the amount of data generated by these instruments takes up a significant proportion of a Universities data storage infrastructure. Storing, managing, accessing, and processing this growing amount of data is a fundamental need and an immense challenge for individual researchers.

Start date

3 June 2019

Expected completion date

8 October 2019

Investment by ARDC

$50,000

Co-investment partners

University of Queensland

University of Western Australia

Lead node

MONASH University

1. Researcher Survey

Investigate how researchers use University instrument repositories to address their research problem and how we can improve these environments to improve data reuse and to create new data collections. The survey will target over 1,200 researchers with data in our repositories.

2. Facilities Survey

Undertake an in-person survey with instrument facilities and, if possible, their instrument industry partners, across all participating Universities, about the opportunities for reference data collections to improve data quality.

3. Research community Survey

Undertake targeted in-person workshops with 3+ research communities to understand their research process with respect to research repositories, data collections and research workflows. Develop a public report that outlines answers to questions A-C above.

4. Report

A public report summarises findings from the above three surveys.

Core features

Environmental scan

This project will help to understand and communicate the value of the data that is held within our repositories and to increase engagement with key stakeholders to ensure University-funded collections are resourced.

Demand analysis

Understanding the demand across domains and modalities for 'normal' or 'healthy' data will allow us to tailor effort, understand more about what meta-data, elements of trustworthiness, or standardisation is important for the purposes of deep machine learning.

Who is this project for?

- Researchers who will use scoped scientific instruments or use data generated from the instruments
- Facility and data managers of scoped scientific instruments
- Funders who invest in scientific instruments

What does this project enable?

This project will enable an investigation into how existing instrument data repositories can be utalised to better serve the research community.

Handy resources

- **FAIR assessment** [PDF 100KB]
- **Final Report** [PDF 100B]
- **Presentation** [PDF 22MB]

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