

National Industry PhD Program: Transaction-Aware Transformers: Tailoring Deep Learning for Financial Modelling

Adelaide University and the Commonwealth Bank of Australia invite applications for this industry PhD project, developing novel transformer architectures for financial modelling.

Program overview

Degree

Doctor of Philosophy

Research area

Computer Science

Mathematics

Academic supervisor

Dr Hemanth Saratchandran

Industry partner

Commonwealth Bank of Australia

Expected commencement

2026

The successful candidate will receive:

- Admission to a PhD program at Adelaide University;
- An Adelaide University Research Scholarship for 4 years, paid at \$53,635 p.a., and a tuition fee waiver;
- Supervision from research specialists at Adelaide University and CommBank;
- Industry embedment with CommBank; and
- Access to professional development opportunities through the University's Graduate Research and Innovation Training program.

Project details

Transformers are a cornerstone of deep learning, succeeding in language, vision, and time-series modelling. While recent advances have tailored transformers to domains such as vision and language, financial applications remain underserved. Financial transactions differ markedly from language and vision, they are sparse, irregular, and structured with domain-specific semantics. Despite this, current financial transformers are built upon standard language transformers without modification. This project will develop transaction-aware transformer architectures designed for financial sequences. We will explore strategies that capture the categorical and hierarchical nature of transactions, study how model depth influences learning dynamics, and design initialization schemes adapted to the statistics of financial data. By aligning architecture with the structure of transaction data, we aim to improve performance and interpretability in key financial tasks such as fraud detection, customer segmentation, and behavioural analysis.

This project will be undertaken in collaboration with Dr Hemanth Saratchandran of the School of Computer Science and Information Technology, and research specialists at CommBank. The student will be located with the CommBank Centre for Foundational AI Research at the



Australian Institute of Machine Learning, Adelaide University City Campus.

Eligibility Requirements

This opportunity is open to both domestic and international students who can meet the requirements for PhD admission at Adelaide University (including English language proficiency in the relevant academic area), and who can demonstrate suitable academic experience in Mathematics or Computer Science (through a high-quality Honours or Master's degree). Selection criteria include:

Academic Qualifications

- Completion of a four-year undergraduate degree in Mathematics or Computer Science (Honours), or a Master's degree in Mathematics or Computer Science.

Research Experience

- Demonstrated ability to conduct research in Artificial Intelligence.
- Highly desirable: publications in

AI-relevant conferences or journals.

In addition, the successful applicant should be able to demonstrate the following attributes:

- Foundational knowledge in machine learning and deep learning.
- Proficiency in programming languages such as Python and C++, with some experience using relevant tools and frameworks.

The successful candidate must be able to enrol as a full-time PhD student at the University in the year of the offer. They must remain based in Adelaide, South Australia for the duration of the award.

Students that have previously completed a PhD program are, unfortunately, ineligible for the National Industry PhD Program.

Application Process

To apply, please email the following documents to

CommBank Centre Manager Rosa Pearson
(rosa.pearson@adelaide.edu.au) with the subject line 'National Industry PhD Program application':

- CV
- Cover Letter (of not more than 2 pages) outlining your interest in the PhD project and describing how your background and research area align with the project
- Degree certificates and relevant academic transcripts, with translations of non-English documentation

Applications close on **27 February 2026**. Please note that applications will be shortlisted on a rolling basis, and the scholarship advertisement may be withdrawn early if a suitable candidate is identified.

initiative to enhance workforce mobility among graduate researchers, and to promote knowledge transfer between academia and industries across all areas. PhD candidates under this program are connected with academic supervisors and industry-based researchers, to co-design innovative, applied research projects. Through their doctoral candidature, students will experience research in both university and industry settings, and undertake specialised training in research translation and commercialisation.

Enquiries

For further information about the National Industry PhD Program, or research degrees at Adelaide University, please contact the [Adelaide University Graduate Research School](#)

About the National Industry PhD Program

The National Industry PhD Program is an Australian Government