

Faculty of Science, Engineering & Built Environment

2025 ADR Summer Project Prize

Application Form



Overview:

The Associate Dean Research 2025 Summer Project Prizes are open to **high achieving second-, third- and fourth-year undergraduate students** who are seeking an opportunity to spend time during Trimester 3 working on a research project within the faculty. **Prize amounts will be a minimum of \$2,000.**

To be eligible, students must be able to undertake the research activity during Trimester 3. Any student finishing their degree at the end of Trimester 2, 2025 must complete their research project on or before 31st December 2025.

There is no formal assessment however all successful applicants are expected to submit a short report and give an oral presentation to their supervisor and the extended research group on their project. This is an opportunity for undergraduate students to extend their practical skills and begin to develop research skills for future studies at Deakin.

Applications open: 19 September 2025

Applications close: 20 October 2025

Outcome notifications advised: 31 October 2025

Instructions:

1. This application form is to be used by academic staff in the Faculty of Science, Engineering and Built Environment to nominate either 2nd, 3rd or 4th year student for a 2025 Summer Project Prize
2. The academic staff member (nominated supervisor) is required to complete Sections 1-4
3. Submit applications to sebe-research@deakin.edu.au before 20 October 2025
4. You will receive a confirmation e-mail that your application has been received and has been forwarded to the Associate Head of School (Research) for review and endorsement
5. All applications will receive an outcome notification

All enquiries should be forwarded to: sebe-research@deakin.edu.au

Section 1: Student details

Student ID:	224236373
Full Name:	Bao Minh Tran
Course:	S308 – Bachelor of Artificial Intelligence
Year	<input checked="" type="checkbox"/> 2 nd Year <input type="checkbox"/> 3 rd Year <input type="checkbox"/> 4 th Year / Honours
School:	School of IT
Campus:	Burwood
E-mail:	s224236373@deakin.edu.au
WAM:	93.375
Number of completed credits: 8	

Section 2: Project Description

Supervisors Name:	Gleb Beliakov and Simon James
Project Title:	Out-of-distribution data fitting
Project Description:	<p>Machine learning approaches to regression and function approximation have seen great success in recent times, especially with the rise in computing power that has enabled large and complex artificial neural networks (ANN) and random forests to be applied to previously intractable problems. However a number of unsolved issues remain. In addition to the interpretability and explainability of these ‘black-box’ methods, there can also be erratic behaviour when a model is presented with data that outside the distribution of training data.</p> <p>This project seeks to investigate the ability of popular machine learning (ML) methods to generalise to datapoints outside the distribution of those in the training set – not just to unseen data, but to regions of the domain that the data has not seen. In other words, we look at the problem of over/underfitting when extrapolating.</p> <p>The work will be to gather different ML data sets in the area of regression/function approximation (the values are real numbers, not labels/categorical data) of relatively low dimension (up to 20), which can then be analysed using traditional ML techniques (artificial neural networks, etc), as well as some alternatives, in terms of their prediction capability. The idea is to see how well the methods generalise, not just beyond training samples but also outside of known distributions, testing in regions where the data was not seen before.</p>
Research Questions:	<p>Which machine learning methods have better performance when generalising to unseen distributions?</p> <p>(stretch) What characteristics of machine learning methods contribute to better or worse performance when generalising to unseen data regions?</p>
Expected Outcomes:	The project will involve collection of suitably large datasets with bibliographic details, summary of the literature, experimental results with benchmarking.

Section 3: Project Considerations

Proposed duration of research activity	Start date: 01/11/2025	End date: 28/02/2026
Location: <input checked="" type="checkbox"/> Burwood <input type="checkbox"/> Waurn Ponds <input type="checkbox"/> Waterfront <input type="checkbox"/> Warrnambool <input type="checkbox"/> Queenscliff		

Griffith Online Fieldwork, provide location

Is this research activity considered: low risk high-risk

If high-risk, please provide additional information on how this activity will occur.

Are all the resources available to support this project?

Yes No

If no, please advise what resources will be required.

Does this research activity require a Work Safety Assessment (WSA)?

Yes No

If yes, please complete the required WSA documentation.

Does this research activity require adding the student to an existing Human Ethics, Animal Ethics, or Biosafety/Biosecurity approval, or submitting a new application?

Yes No

If yes, please consider the time required to submit a modification/amendment or new application and await approval by the appropriate committee.

Please list any additional project considerations:

Section 4: Declaration and signatures

As supervisor and student, we understand that we are responsible for ensuring that the proposed laboratory work/fieldwork to be undertaken will comply with university standards, including meeting all OH&S and risk management (if applicable at the time this research activity is occurring).

Supervisor Name: Prof. Gleb Beliakov

Date: 15/10/2025

Supervisor Signature:

Student Name: Bao Minh Tran

Student Signature: Bao Minh Tran signed

Date: 10th Oct 2025

Please ensure you have completed all the required fields in Section 1-4 and submit to sebe-research@deakin.edu.au Please save your file as: Student SURNAME First name, School, 2025 Summer Project Prize Application