RECRUITMENT

Research Engineer

DEAKIN UNIVERSITY

CONTACT

Dr Sunil Gupta
Associate Professor, Applied Artificial Intelligence Institute (A2I2)
+61 3 522 73109
sunil.gupta@deakin.edu.au

Applications close date is as per advertisement

About Deakin

Top 1% of the world's universities

No. 1 In Victoria for student satisfaction 2010-2017

No. 211 ARWU global ranking of world universities' research capabilities

Deakin's growing reputation is reflected in its rapid rise in international rankings; Deakin entered the prestigious Academic Ranking of World Universities for the first time in 2014 and now ranks an estimated 211 (AWRU 2018). Deakin is ranked 31 in the QS ranking of the world's top universities under 50 years.

Established in 1974, Deakin University was named after the leader of the Australian Federation movement and the nation's second Prime Minister, Alfred Deakin.

Deakin University has five campuses, one in Melbourne's eastern suburbs, two in the port city of Geelong and one in Warrnambool on the south-west coast of Victoria. Deakin's fastest growing campus is in the Cloud where over 15 000 students study predominantly online. All students, regardless of their campus or mode of study, benefit from Deakin's award-winning digital environment.

Deakin is proud of its inclusive and student-focussed culture and its reputation for using innovative digital solutions to provide an engaging and personalised learning experience. Deakin is committed to lifelong learning, providing students with choices about how, when and where learning occurs.

Deakin prides itself on developing career-ready graduates, innovative, resilient, and well prepared for rapidly changing workforce needs. Deakin has a strong focus on teaching, with student satisfaction and the employability of its students, key indicators of success. Deakin ranks first in Victoria for student satisfaction (SES) and graduate employability (GOS).

Deakin's four faculties offer courses across the arts, design, science, sport, nutrition, architecture, business, law, medicine, optometry, engineering, nursing, allied health, psychology and teaching.

With almost 62 000 students Deakin is one of Australia's largest universities and is ranked in the top 1% of the world's universities (ARWU 2018).

As an Australian university with a global impact, Deakin is translating its research into the commercial outcomes that will drive the innovation Australia's economy needs now and into the future. Research at Deakin focusses on innovation and robust partnerships with industry and business, and it is building a formidable international reputation in areas of emerging national social, economic and political priority in its core areas of health, sport, carbon fibre, energy and cyber security. Deakin's manufacturing innovation precinct provides an important link between technological innovation and successful industry outcomes, strengthening and streamlining pathways for commercial research.

Our strategy

Deakin's vision and mission is articulated in its strategic plan *LIVE the future: Agenda 2020*. Through *LIVE the future*, Deakin aspires to be Australia's premier university in driving the digital frontier, enabling globally connected education for the jobs of the future, and research that makes a difference to the communities Deakin serves.

Informed by its Australian and Victorian context and engaged locally in the communities it serves, Deakin advances:

- Learning – offering students a brilliant education where they are and where they want to go
- Ideas – making a difference through world-class innovation and research
- Value – strengthening our communities, enabling our partners and enhancing our enterprise
- Experience – delighting our students, our alumni, our staff and our friends.

These four interconnecting elements form the acronym *LIVE*, and together they articulate the Deakin promise to its students, staff, alumni, partners and friends.

Applied Artificial Intelligence Institute (A^2I^2)

A^2I^2 transforms industries and improves lives by implementing safe, effective uses of AI and exploring new frontiers in AI research. We believe in the revolutionary impact of humans empowered by AI. We cover all aspects of AI research and development from fundamental science to translation and commercialisation.

a2i2.deakin.edu.au

In merging the extensive capabilities of Deakin's Institute for Pattern Recognition and Data Analysis (PRaDA) and the Deakin Software and Technology Innovation Laboratory (DSTIL), A^2I^2 brings together skills and strengths from across Deakin.

Our Approach

A^2I^2 tackles real-world problems using methods grounded in statistical pattern recognition and modern machine learning to make discoveries that benefit society and advance industry. Through our research, we aim to advance the frontiers of technology.

Our Research includes but not limited to

- **Bayesian optimisation:** We believe the time is not far off when Bayesian optimisation will start to mark its achievement by accelerating the discovery of a new alloy with outstanding mechanical properties, or a new synthetic fabric with amazing properties or a new optimised printing process of stem cells for large scale adoption of regenerative medicine.
- **Deep learning:** Our sub-areas include representation learning, deep reinforcement learning, generative models, modelling of graphs and relations, designing memory and attention mechanisms, continual learning, learning to reason, and knowledge-based inference. We apply Deep Learning to solve important real-world problems where data is abundant.
- **Algorithmic assurance:** It is important to ensure that the decisions made by algorithms are in congruence with its human users. We have embarked on this research area, which we call Algorithmic Assurance.
- **AI for biology and health:** Our research aims to step away from the one-size-fits-all approach to healthcare, and instead develop methods that tailor disease diagnosis and treatment to specific individuals.
- **AI for behaviour understanding:** The primary goal of this work is to utilise social media as a means for behaviour analytics, gaining new understandings of new forms of behaviours emerging from online settings.

Our Publications

Our research team regularly publishes their findings in prestigious journals and open source publications to assist others in pushing the boundaries of possibility.

Deakin's Promise to Equity, Diversity and Inclusion

At Deakin we value diversity, embrace difference and nurture a connected, safe and respectful community. We recognise that our academic workforce is increasingly diverse with a variety of backgrounds, experiences and responsibilities. In many cases, academic careers can be put on hold through career breaks or part-time work arrangements to take on caring duties, gain experience in other industries, for medical reasons or other personal circumstances.

Achievement relative to opportunity places more emphasis on the quality as opposed to the quantity of research outputs. In your application, we encourage you to comment on your achievements relative to opportunity.

Research Engineer

RESEARCH ONLY LEVEL A

The successful candidate will join the Applied Artificial Intelligence Institute (A^2I^2) at its Waurn Ponds location (formerly PRaDA) and will contribute towards research activities in the areas of machine learning and thus expand the research output of the A^2I^2 Institute.

Level A members of staff typically perform these duties at the following levels:

RESEARCH AND SCHOLARSHIP

- Initiating and conducting research under limited supervision either as a member of a team, or independently (where appropriate), to achieve the objectives of the relevant project or research agenda as specified by the Director.
- Effectively produce data, maintain data protocols and enter data into the Deakin Research Online (DRO) database. Conduct preliminary data cleaning, screening and analysis.
- Constructively contributing to a vibrant research team including participating with colleagues in developing and maintaining links and partnerships with industry and the wider community.
- Promoting the activities of the University, particularly those relating to research and research training, within academic and professional communities locally and in Australia.
- Being involved in professional activities, including (subject to availability of funds) attendance at conferences and seminars in their field of expertise.
- Undertaking experimental design and operation of advanced laboratory and technical equipment or conduct advanced research procedures.
- Managing experimental data and extraction of relevant information for reporting and publication and jointly integrating and testing data models, evaluating and refining.
- Undertaking some administrative functions primarily connected with the area of research.
- Providing advice to postgraduate students within the field of the staff member's research.
- Attending meetings associated with the research project(s) with which the staff member is involved, and other meetings as appropriate.

In addition to the above, specific duties include:

- Provide software design and programming support to research projects.
- Join fundamental research projects that have built momentum and are looking to scale and enhance work.
- Collaborate with other researchers to implement and evaluate algorithms.
- Design of ML experiments and scientific evaluation of results.
- Develop software system and application prototypes of the proposed solutions.
- Create interactive user interfaces to help researchers visualise and understand AI
- Generate creative solutions (patents) and publish research results in top venues (papers).

OCCUPATIONAL HEALTH AND SAFETY

- Following safe work procedures and instructions
- Taking reasonable care for the safety of self and others
- Seeking guidance for all new or modified work procedures
- Ensuring that any hazardous conditions, near misses and injuries are reported immediately to a supervisor
- Participating in meetings, training and other health and safety activities

Performance expectations

Annual performance objectives and expected outcomes will be defined for this role in accordance with the Minimum Standards and Typical Duties for Academic Levels (MSTDALs) and Faculty Research Expectation Models (FREMs). Specific duties will be allocated with reference to the applicable Workload Allocation Model (WAM). These documents are updated from time to time and are available on request.

Research Engineer

- Using equipment in compliance with relevant guidelines, without wilful interference or misuse
- Must cooperate with the University in relation to actions taken by the University in order to comply with the Occupational Health and Safety and Environmental legislation

In addition, research only academic staff are responsible for ensuring that an equivalent standard of environment, health and safety is afforded to their students as is afforded to University staff generally. Research only academic staff are deemed to have principal supervisory duty for undergraduate and postgraduate research student activities

ORGANISATIONAL RELATIONSHIPS

The appointee is expected to contribute towards the research effort of the University and conduct research as part of the Applied Artificial Intelligence Institute research team and independently, as required, in the field of machine learning and artificial intelligence.

ORGANISATIONAL CONTEXT

The Research Engineer will report to the Co-Director of A^2I^2. The appointee will work with support, guidance and/or direction from research only staff classified at Research Fellow (Level B) and above with an increasing degree of autonomy as the researcher gains greater skills and experience.

SELECTION CRITERIA

QUALIFICATIONS

- A Bachelor degree in Computer Science; or equivalent.

EXPERIENCE, KNOWLEDGE, AND SKILLS

ESSENTIAL

- Research experience which has resulted in reports, or professional or technical contributions, which give evidence to research ability.
- Ability to perform comprehensive literature reviews and provide critical feedback on state-of-the art solutions.
- Good theoretical understanding of core machine learning concepts and techniques including data normalization, linear and logistic regression, principle component analysis, decision trees, SVMs and deep neural networks.
- Demonstrated skills in the coordination of data collection, data entry and analysis.
- Extensive programming skills including good knowledge of Python and C++.
- Demonstrated ability to work effectively as a member of an interdisciplinary team.
- Demonstrated organisational skills including the demonstrated ability to maintain a high standard of laboratory and data record keeping and a demonstrated ability to meet competing deadlines.
- Good interpersonal skills, including the ability to interact well with researchers/technical staff and external parties and excellent oral, written communication and presentation skills.

DESIRABLE

- 3+ years of programming experience in Python, Java, C/C++ or similar languages.
- Experience on deep learning applications including working knowledge of TensorFlow or PyTorch.
- Experience with numerical methods and data visualisation
- Demonstrated skills in working with large scale software systems and data in particular, work surrounding pattern discovery and classification.
- Proven track record of research publications.
- Demonstrated organisational and project management skills, including the ability to work in a diverse and complex environment in a multi-disciplinary team with limited supervision.

PERSONAL QUALITIES

- Interpersonal skills that support the ability to establish and maintain highly effective working relationships with a diverse range of people including students, the staff of the Faculty and School and with other members of the University.
- Ability to adapt to changes in the environment and effectively meets new challenges.
- Commitment to the A^2I^2 Mission, Core Commitments and Values which include - excellence, academic freedom, collegiality, continuous improvement, ethical behaviour, accountability and environmental responsibility.

Appointment process and how to apply

Application

Thank you for your interest in the position of Research Engineer.

Please direct all correspondence and enquiries to;

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Associate Professor, A2I2
+61 3 522 73109
sunil.gupta@deakin.edu.au

How to apply

Please apply online via:

deakin.edu.au/about-deakin/work-atdeakin

Include cover letter, curriculum vitae and a response to the Selection Criteria.

Please quote reference number:

495764

Interview process

An initial screening of prospective candidates will take place.

Short-listed candidates will be interviewed by a panel of esteemed colleagues.

Details of professional referees will be required prior to interview.

Remuneration and benefits

An attractive remuneration package is offered. Salary will be commensurate with qualifications, experience and research record.

Relocation support may also be available.

Term of appointment

Appointment is for a fixed term position which is subject to an initial 12 months probationary period.

Special Requirement/s

This role has been identified as having contact with children and requires the incumbent to apply for and maintain a Working With Children Check (refer to Deakin's Recruitment Procedure for further details).

Our locations

Deakin has five campuses, one in **Burwood**, two in Geelong (**Waterfront** and **Waurn Ponds**), one in **Warrnambool** and the vibrant Cloud Campus where over 25% of our students study. All students, regardless of their campus or mode of study, benefit from Deakin's award-winning digital environment.

Melbourne has been named the worlds' most liveable city for more than 5 years running*.

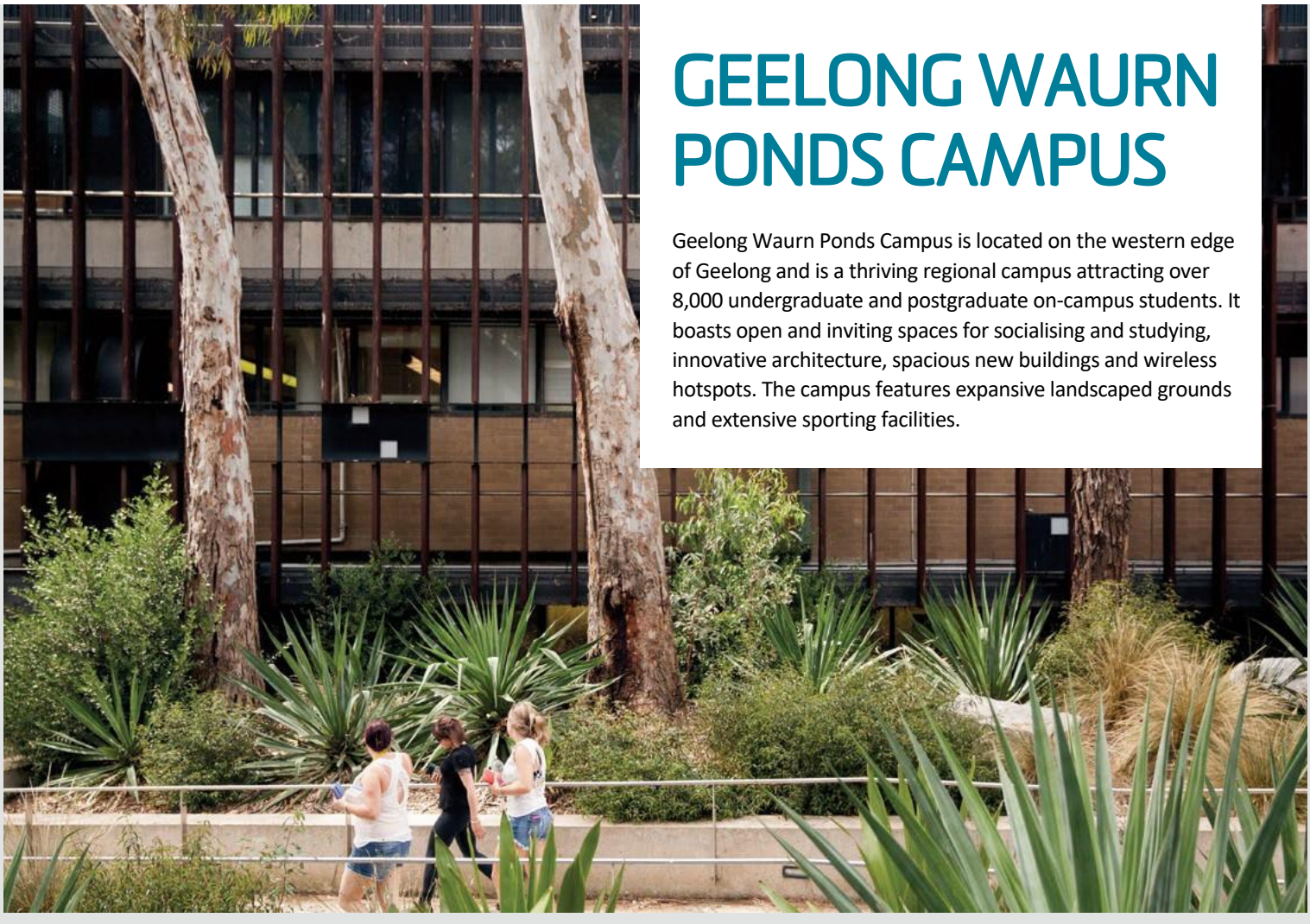
Further information regarding our locations and relocating to Victoria can be found here:

Our locations

Considering Relocation

Geelong/SurfCoast timelapse

**The Economist's annual study*



GEELONG WAURN PONDS CAMPUS

Geelong Waurn Ponds Campus is located on the western edge of Geelong and is a thriving regional campus attracting over 8,000 undergraduate and postgraduate on-campus students. It boasts open and inviting spaces for socialising and studying, innovative architecture, spacious new buildings and wireless hotspots. The campus features expansive landscaped grounds and extensive sporting facilities.