Position Description

Research Fellow

Details

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<thead>
<tr>
<th>Area</th>
<th>Deputy Vice-Chancellor Research Portfolio</th>
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<tr>
<td>Team / School</td>
<td>Applied Artificial Intelligence Institute (A²I²)</td>
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<tr>
<td>Employment</td>
<td>Full time and fixed-term</td>
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<tr>
<td>Location</td>
<td>Geelong Waurn Ponds Campus</td>
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<tr>
<td>Classification</td>
<td>Level B</td>
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<td>Manager Title</td>
<td>Co-Director A²I²</td>
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Deakin

Deakin is a Victorian university with a global impact. We are agile and innovative, and committed to making a positive impact through our excellence in education and research and the contributions we make to the wider community.

Our reputation has been built on the dedication and expertise of our staff. We offer a dynamic, diverse and inclusive working environment with opportunities to grow and develop careers. We believe that a progressive, thriving culture will ensure people choose to come, and stay at Deakin and contribute to our ongoing success.

As one of Australia’s largest universities, Deakin has strong global linkages, world-class research and an education portfolio that blends the best of campus and digital delivery into a highly supportive and personalised student experience.

We offer outstanding education founded on the experience we create for our learners and guided by graduate outcomes for successful lives and careers. We undertake globally significant discovery research that benefits our communities through the innovative translation of our ideas into new services, products, policies and capabilities.

At Deakin we value diversity, embrace difference, and nurture an inclusive, safe and respectful community. Deakin is an Employer of Choice for Gender Equality, a SAGE Athena SWAN Bronze Award holder, seeking gender equity for Women in STEMM, and a Silver Award holder in the Australian Workplace Equality Index for LGBTQ inclusion. We strongly encourage applications from Aboriginal and Torres Strait Islander people and people of all cultures, abilities, sexualities and genders.

Strategic Plan – Deakin 2030: Ideas to Impact

Benefits of working at Deakin
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Overview

The Research Fellow will contribute to the research objectives, profile and research reputation, of Deakin’s Applied Artificial Intelligence Institute (A²I²).

A²I² tackles real-world problems using methods grounded in statistical pattern recognition, modern machine learning, deep learning and reinforcement learning to make discoveries that benefit society and advance industry.

Through our research, we aim to advance the frontiers of technology.

Responsibilities

Research and Innovation

- Develop predictive machine learning models for application on physical systems (regression/classification)
- Develop models for optimising the performance of physical systems with low data volumes
- Utilise numerical tools for modelling physical systems in order to generate synthetic data suitable for use in regression/classification model development or system optimisation
- Initiate, design and conduct productive, high-quality research, scholarship and creative activities generating high impact outputs to achieve the objectives of the relevant project or research agenda
- Produce or contribute to the production of conference and journal papers in high-quality venues for machine learning (e.g. ICML, NeurIPS, AAAI, ICLR etc) and applied machine learning (domain-specific)
- Engage collaboratively to develop novel and high-quality research or creative activities and support seeking funding for research and creative activities
- Prepare or contribute to the preparation of applications for external competitive and other funding
- Supervise HDR students with timely completions and productive, high-quality outcomes, and provide effective mentoring to support their professional and career development and employability
- Constructively contribute the maintenance of a vibrant research team by guiding the research effort of junior colleagues.
- Contribute to the implementation of University’s community engagement agenda where appropriate as part of projects
- Promote the activities of the University, particularly those relating to research and research training, within academic and professional communities in Australia and internationally

Relationships

- Internal relationships:
  - The Research Fellow will work as part of collaborative teams with other A²I² members, or other Deakin faculties or institutes, and may also take direction from senior A²I² staff.
  - The Research Fellow may have principal supervisory duty for undergraduate and postgraduate research student activities.
- External relationships:
  - The research Fellow will establish, maintain and foster relationship with A²I² industry collaborators.
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Selection

Qualifications and experience

- PhD in Computational Physics, Electrical Engineering, Computer Science or equivalent qualification
- 3+ years of programming experience in Python, Matlab, Julia or similar languages
- Emerging reputation in research, which has resulted in publications, conference papers, reports, or professional or technical contributions in:
  - Machine Learning, including Deep Learning and Reinforcement Learning, for predictive tasks
  - Physics-informed machine learning, or the integration of data and mathematical models for the optimisation of physical systems or the prediction of physical system performance
  - Applied system optimisation, including Bayesian models, Kernel learning, or other forms of mathematical optimisation.
- Demonstrated knowledge of engineering and applied science, including the utilisation of numerical tools to model physical systems, e.g., Finite Element Method (FEM), computational materials engineering (ICME, CALPHAD, etc.), etc.
- Strong theoretical understanding of core machine learning concepts and techniques
- Desirable: Success in obtaining external research funding

Capabilities

1. Planning and Organising: Plans, analyses and co-ordinates the delivery of projects while balancing priorities and resources
2. Navigating Complexity: Proactively and quickly making sense of complex issues; responding effectively to difficult and ambiguous situations
3. Collaboration: Proactively supports working together, shares ideas and provides constructive feedback; respects and values others
4. Emotional Intelligence: Recognises emotions in self and others; uses emotional cues to guide thinking and behaviour
5. Communicating with Influence: Engages and energises others through clear and persuasive communication
6. Personal Resilience: Maintains composure and focus under pressure, adapts to changing situations and recovers from setbacks

Special Requirements

- Infrequent travel may be required
- Drivers Licence
- Working with Children Check

Note The intention of the position description is to provide an outline of scope and responsibilities, at a point in time. Please note, responsibilities may evolve in accordance with organisational needs.