RESEARCH FELLOW

DEPARTMENT/UNIT Data Science and AI
FACULTY/DIVISION Faculty of Information Technology
CLASSIFICATION Level A
WORK LOCATION Clayton campus

ORGANISATIONAL CONTEXT

Everyone needs a platform to launch a satisfying career. At Monash, we give you the space and support to take your career in all kinds of exciting new directions. You’ll have access to quality research, infrastructure and learning facilities, opportunities to collaborate internationally, as well as the grants you’ll need to publish your work. We’re a university full of energetic and enthusiastic minds, driven to challenge what’s expected, expand what we know, and learn from other inspiring, empowering thinkers. Discover more at www.monash.edu.

The Faculty of Information Technology aims to lead global IT research and education. Our strong reputation and international profile attracts the best students worldwide and we offer a range of accredited courses that transform our graduates into highly skilled and sought after IT professionals, equipped to work globally. Our research is multi-disciplinary, multi-campus and multi-national, giving us a unique capacity to reach out further and deeper than any other institution in Australia. Our research priorities are both technically ambitious and embedded in everyday life. To learn more about the Faculty and the exciting work we do, please visit https://www.monash.edu/it.

In the information age, data are ubiquitous. Data science extracts value from data assets, helping us understand the past, better manage the present, and effectively plan for the future. It plays a critical role in advancing industry, commerce, governance and research. At Monash IT, we have an unsurpassed breadth and depth of expertise across the broad range of areas that underpin the fast-developing field of data science. Our Data Science Group has more than 40 permanent academic staff backed by a large cohort of project-based researchers and postgraduate students, and includes one of the leading optimisation groups in the world.

Our areas of research expertise include:

- Artificial Intelligence: Natural language processing, Bayesian techniques, knowledge acquisition and processing
- Machine Learning: Deep learning, probabilistic modelling, association discovery, causal models
- Optimisation: constraint and mixed-integer programming, metaheuristics, modelling languages, non-differentiable optimisation, resource planning and scheduling, and path finding algorithms
- Visualisation: immersive analytics, interactive visualisation, and layout and presentation
POSITION PURPOSE

A Level A research-only academic is expected to contribute towards the research effort of the university and to develop their research expertise through the pursuit of defined projects relevant to the particular field of research.

The Research Fellow will work in the areas of weak supervision of deep learning models for NLP. The relevant topics are multitask learning, learning to learn and meta-learning, zero/few-shot learning, domain adaptation, reinforcement learning, imitation learning, and alike. The potential NLP applications may include machine translation, dialogue systems, or syntactic/semantic parsing. The outcomes of this exciting research position are expected to be published at the top-tier venues in NLP and ML, such as ACL, EMNLP, NAACL, ICML, NIPS, and ICLR.

Reporting Line: The position reports to the Senior Lecturer, Data Science and AI

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

KEY RESPONSIBILITIES

Specific duties required of a Level A research-only academic may include:

1. The conduct of research under limited supervision either as a member of a team or, where appropriate, independently and the production or contribution to the production of conference and seminar papers and publications from that research

2. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise

3. Limited administrative functions primarily connected with the area of research of the academic

4. Development of a limited amount of research-related material for teaching or other purposes with appropriate guidance from other staff

5. Occasional contributions to teaching in relation to their research project(s)

6. Experimental design and operation of advanced laboratory and technical equipment or conduct of advanced research procedures

7. Attendance at meetings associated with research or the work of the organisational unit to which the research is connected and/or at departmental, school and/or faculty meetings and/or membership of a limited number of committees

8. Advice within the field of the staff member's research to postgraduate students

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
   - A doctoral qualification in Natural Language Processing and/or Machine Learning; or
   - an honours degree in the relevant discipline or have equivalent qualifications or research experience; or
   - an honours degree or higher qualifications in the relevant discipline and/or progress towards a doctorate in the relevant discipline
Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills; including a track record of refereed research publications in top-tier NLP and/or ML venues, such as ACL, EMNLP, NAACL, NIPS, ICML, and ICLR

3. Strong background in cutting-edge Deep Learning research. Proficiency with any of the following Machine Learning topics would be a great plus: multitask learning, learning to learn and meta-learning, zero/few-shot learning, domain adaptation, reinforcement learning, imitation learning, and alike

4. Strong implementation skills with at least one deep learning package, e.g. PyTorch, Tensorflow, or DyNet

5. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise

6. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines

7. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents

8. A demonstrated awareness of the principles of confidentiality, privacy and information handling

9. A demonstrated capacity to work in a collegiate manner with other staff in the workplace

OTHER JOB RELATED INFORMATION

- Travel to other campuses of the University may be required
- There may be a requirement to work additional hours from time to time
- There may be peak periods of work during which taking of leave may be restricted

LEGAL COMPLIANCE

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including: Equal Employment Opportunity, supporting equity and fairness; Occupational Health and Safety, supporting a safe workplace; Conflict of Interest (including Conflict of Interest in Research); Paid Outside Work; Privacy; Research Conduct; and Staff/Student Relationships.