



## RESEARCH FELLOW

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

### ORGANISATIONAL CONTEXT

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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](http://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 [www.infotech.monash.edu.au/](http://www.infotech.monash.edu.au/).

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: Bayesian techniques, natural language processing, knowledge acquisition and processing
- Machine Learning: association discovery, causal models, classification, deep learning and forecasting
- Modelling: agent-based modelling and artificial life
- Optimisation: constraint and mixed-integer programming, metaheuristics, modelling languages, nondifferentiable optimisation, resource planning and scheduling, and path finding algorithms
- Visualisation: immersive analytics, interactive visualisation, and layout and presentation

## POSITION PURPOSE

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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 works at the interface of computer science, machine learning and medical research. The position is involved in potentially ground-breaking research developing and implementing algorithms and software to predict the risk of a woman developing breast cancer using digital, pre-diagnosis mammographic images. The Research Fellow is required to use and develop deep neural network technology and to build high quality software tools suitable for use by non-specialists.

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

**Supervisory Responsibilities:** Not applicable

**Financial Delegation:** Not applicable

**Budget Responsibilities:** Not applicable

## KEY RESPONSIBILITIES

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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

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### Education/Qualifications

1. The appointee will have:
  - A doctoral qualifications in Computer Science, Statistics or a closely related field

### Knowledge and Skills

2. Demonstrated analytical and manuscript preparation skills; including a track record of refereed research publications
3. Ability to solve complex problems by using discretion, innovation and the exercise diagnostic skills and/or expertise
4. Well-developed planning and organisational skills, with the ability to prioritise multiple tasks and set and meet deadlines

5. Excellent written communication and verbal communication skills with proven ability to produce clear, succinct reports and documents
6. A demonstrated awareness of the principles of confidentiality, privacy and information handling
7. A demonstrated capacity to work in a collegiate manner with other staff in the workplace
8. Demonstrated computer literacy and proficiency in the production of high level work using software such as Microsoft Office applications and specified University software programs, with the capability and willingness to learn new packages as appropriate
9. Demonstrated proficiency with programming languages such as C++, MATLAB and/or R
10. Demonstrated experience with machine learning tools and techniques
11. An understanding of statistical tools such as hypothesis testing, confidence intervals and regression

## **OTHER JOB RELATED INFORMATION**

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- 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**

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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.