



RESEARCH FELLOW

DEPARTMENT/UNIT	Caulfield School of Information Technology
FACULTY/DIVISION	Faculty of Information Technology
CLASSIFICATION	Level B
WORK LOCATION	Caulfield campus

ORGANISATIONAL CONTEXT

Monash is a university of transformation, progress and optimism. Our people are our most valued asset, with our academics among the best in the world and our professional staff revolutionising the way we operate as an organisation. For more information about our University and our exciting future, please visit 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.monash.edu/it.

The **AI-based Discrete Optimization** research group in the Faculty of Information Technology is a world leading research group in discrete optimization. Together with partners at the University of Melbourne and Data61, it has created and continues to develop MiniZinc, the leading modelling language for constraint programming; and lazy clause generation CP solving, which provides the state of the art CP solving technology. The Faculty is seeking to significantly expand the AI-based Discrete Optimization research group, to build on its world leading capabilities to make discrete optimization more accessible and more effective.

To learn more about the AI-based Discrete Optimization research group and the work we do, please visit <https://www.monash.edu/it/data-science/optimisation>.

POSITION PURPOSE

A Level B research-only academic is expected to carry out independent and/or team research within the field in which he/she is appointed and to carry out activities to develop her/his research expertise relevant to the particular field of research.

You will be part of a team who collaboratively work on all aspects of the project, from concepts, theoretical underpinning, and design, through implementation and experimentation, to publication of results, curation of data, and maintenance of generated software. Primary responsibilities of the positions will be both the development of, and experimentation with, constraint solving methods and related mathematical techniques; or the development of modelling language constructs, and analyses and transformations that can produce efficient inputs to solvers. You will work side by side with a large number of other researchers in analysis, optimization, and programming language technologies, including groups from the University of Melbourne and CSIRO Data61.

Reporting Line: You will report to Professor Peter Stuckey

Supervisory Responsibilities: Not applicable

Financial Delegation: Not applicable

Budget Responsibilities: Not applicable

KEY RESPONSIBILITIES

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

1. The conduct of research either as a member of a team or independently and the production of conference and seminar papers and publications from that research
2. Supervision of research-support staff involved in the staff member's research
3. Guidance in the research effort of junior members of research-only Academic staff in her/his research area
4. Contribution to the preparation or, where appropriate, individual preparation of research proposal submissions to external funding bodies
5. Involvement in professional activities including, subject to availability of funds, attendance at conferences and seminars in the field of expertise
6. Administrative functions primarily connected with her/his area of research
7. Occasional contributions to the teaching program within the field of the staff member's research
8. Co-supervision or, where appropriate, supervision of major honours or postgraduate research projects within the field of the staff member's area of research
9. 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

KEY SELECTION CRITERIA

Education/Qualifications

1. The appointee will have:
 - A PhD in Computer Science, Mathematics or a related discipline from a recognised university and subsequent qualifications and research experience in the area; or
 - an equivalent combination of relevant experience and/or education/training

Knowledge and Skills

2. Demonstrated strong record of publications, conference papers, reports and/or professional and/or technical contributions in the relevant discipline area
3. Significant research experience in one or more of the following areas: constraint programming, mixed integer programming, SAT and SAT Modulo Theories, modelling languages, program analysis

4. Demonstrated experience/capability for student supervision including supervision of honours students and the co-supervision of PhD students
5. Ability to work independently in a research environment
6. Ability to work as part of a team
7. Ability to prepare and communicate the aims and outputs of research projects in a range of formats
8. High-level organisational skills, with demonstrated capacity to establish and achieve goals
9. Excellent written and oral communication skills

OTHER JOB RELATED INFORMATION

- Travel (e.g. to other campuses of the University) may be required
- There may be peak periods of work during which the 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.