



POSITION DESCRIPTION

School of Electrical, Mechanical and Infrastructure Engineering
Melbourne School of Engineering

Research Fellow in Autonomous Systems

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| POSITION NO | 0045812 |
| CLASSIFICATION | Research Fellow (Level A) |
| SALARY | \$69,148 – \$93,830 p.a. Level A |
| SUPERANNUATION | Employer contribution of 9.5% |
| WORKING HOURS | Full-time (1.0 FTE) |
| BASIS OF EMPLOYMENT | Fixed term for 12 months |
| OTHER BENEFITS | http://about.unimelb.edu.au/careers/working/benefits |
| CURRENT OCCUPANT | Vacant |
| HOW TO APPLY | Online applications are preferred. Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number. |
| CONTACT FOR ENQUIRIES ONLY | Professor Chris Manzie Email manziec@unimelb.edu.au <i>Please do not send your application to this contact</i> |

For information about working for the University of Melbourne, visit our websites:
about.unimelb.edu.au/careers

Position Summary

The research fellow will join a team of academic staff and postgraduate students working on Autonomous Systems. The team maintains a longstanding partnership with a number of industry partners and Defence Science and Technology Group in this area.

Within this position, the research fellow will have the opportunity to develop and implement novel algorithms in one or more areas pertaining to multiple vehicle coordination; human-robot teaming; decentralised optimisation and control; collaborative systems; and/or exploration of uncertain environments.

The research fellow must have a background in engineering, computer science or applied mathematics, with demonstrated expertise in modelling and control of dynamical systems and numerical optimisation, as well as experience and a desire to implement algorithms on platforms based at UoM.

The research fellow will be located in the Department of Electrical and Electronic Engineering within the Melbourne School of Engineering, and will collaborate with researchers and engineers internally and externally.

The Melbourne School of Engineering is strongly committed to supporting diversity and flexibility in the workplace. Applications for part-time or other flexible working arrangements will be welcomed and will be fully considered subject to meeting the inherent requirements of the position.

The University plan seeks to increase the diversity of the workforce and the representation of women in areas they have been traditionally under-represented. Consistent with this the School is seeking to increase the representation of women in the academic workforce across engineering disciplines. Under a Special Measure, under Section 12 (1) of the Equal Opportunity Act 2010 (Vic) the School is seeking to lift the representation of women from 20% in 2014 to at least 25% over the next 5 years, and strongly encourages applications from suitably qualified female candidates.

1. Selection Criteria

1.1 ESSENTIAL

- ▶ A PhD in Engineering or Applied Mathematics, or closely related discipline;
- ▶ Expertise in the theory of system modelling and control and a strong interest in the application of these to address practical problems in real-time decision-making scenarios;
- ▶ A record of quality research as evidenced by publications in leading journals and at conferences commensurate with opportunity;
- ▶ Ability to perform independent research and a commitment to interdisciplinary research;
- ▶ Demonstrated capacity to communicate research concepts to technical and non-technical audiences;
- ▶ Excellent ability in analysing data, problem solving and maintaining accurate research records;
- ▶ Capability for innovative research, as evidenced by scholarly publication;
- ▶ Experience in using initiative, working with minimal supervision and ability to prioritise tasks to achieve project objectives within timelines;
- ▶ Excellent written and verbal communication skills, demonstrated by presentation of research results at conferences, internal forums and through manuscript submissions;

- ▶ Excellent interpersonal skills, including an ability to interact with internal and external stakeholders (academic, administrative and support staff) in a courteous and effective manner.

1.2 DESIRABLE

- ▶ Experience with the implementation of numerical methods;
- ▶ Experience with engineering applications of optimisation techniques in real-time control of dynamical systems;
- ▶ Experience in supervision of students and/or research assistants;
- ▶ Experience in the completion of ethics applications and submission of grant applications;
- ▶ Ability to structure, engage and present information clearly to various audiences;

2. Key Responsibilities

2.1 RESEARCH – ADVANCEMENT OF DISCIPLINE

- ▶ Independently plan and carry out research on the nominated research project and work towards completion of the aims of the project;
- ▶ Develop effective timelines and milestones based on goals of the research programme;
- ▶ Perform data and microstructure analysis, and be responsible for qualitative and statistical analysis of research data and to communicate this information to the Chief Investigators and collaborators;
- ▶ Regularly write technical reports on the outputs of the experiments conducted, and maintain accurate and detailed records of all experiments conducted;
- ▶ Participate in preparation of manuscripts for publication in peer-reviewed journals;
- ▶ Liaise effectively with collaborators with a variety of internal and external stakeholders;
- ▶ Assist other researchers in carrying out experiments in order to work as a team and further the department's research output;
- ▶ Contribute to the development of the Department's and the School's strong research program in Control and Signal Processing;
- ▶ Work towards building an independent research project;

2.2 TEACHING AND LEARNING

- ▶ Contribute to teaching, training, scientific mentoring and supervision of students;
- ▶ Supervise junior research staff in the appointee's area of expertise;
- ▶ Conduct lectures, tutorials, mark and undertake laboratory duties as required by the Department. (if required)

2.3 ENGAGEMENT

- ▶ Active participation in some outreach activities relating to research and scholarship;
- ▶ Effective liaison with external networks to foster collaborative partnerships;

- ▶ Involvement in professional activities, including consultations and referrals;
- ▶ Present results at local, national forums;
- ▶ Attend and actively participate in departmental seminars, meetings and/or committee memberships.

2.4 SERVICE AND LEADERSHIP

- ▶ Active participation in the communication and dissemination of research;
- ▶ Identify sources of funding to support individual or collaborative projects, relating to teaching, research and engagement practice in the discipline;
- ▶ Effective supervision of research support staff;

2.5 OTHER

- ▶ Perform other tasks as requested by the supervisor or the Head of the Department;
- ▶ Undertake Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in Section 5.

3. Equal Opportunity, Diversity and Inclusion

The University is an equal opportunity employer and is committed to providing a workplace free from all forms of unlawful discrimination, harassment, bullying, vilification and victimisation. The University makes decisions on employment, promotion and reward on the basis of merit.

The University is committed to all aspects of equal opportunity, diversity and inclusion in the workplace and to providing all staff, students, contractors, honorary appointees, volunteers and visitors with a safe, respectful and rewarding environment free from all forms of unlawful discrimination, harassment, vilification and victimisation. This commitment is set out in the University's People Strategy 2015-2020 and policies that address diversity and inclusion, equal employment opportunity, discrimination, sexual harassment, bullying and appropriate workplace behaviour. All staff are required to comply with all University policies.

The University values diversity because we recognise that the differences in our people's age, race, ethnicity, culture, gender, nationality, sexual orientation, physical ability and background bring richness to our work environment. Consequently, the People Strategy sets out the strategic aim to drive diversity and inclusion across the University to create an environment where the compounding benefits of a diverse workforce are recognised as vital in our continuous desire to strive for excellence and reach the targets of Growing Esteem.

4. Occupational Health and Safety (OHS)

All staff are required to take reasonable care for their own health and safety and that of other personnel who may be affected by their conduct.

OHS responsibilities applicable to positions are published at:

<http://safety.unimelb.edu.au/people/community/responsibilities-of-personnel>

These include general staff responsibilities and those additional responsibilities that apply for Managers and Supervisors and other Personnel.

5. Other Information

5.1 SCHOOL OF ELECTRICAL, MECHANICAL AND INFRASTRUCTURE ENGINEERING

The School of Electrical, Mechanical and Infrastructure Engineering undertakes teaching and research across a range of disciplines that are internationally recognised for their contribution to fundamental research. It has a number of well-established industry linkages and international partnerships. It is building a vibrant profile of interdisciplinary research, working with industry with an aim to contribute to society. It offers a comprehensive range of accredited Masters of Engineering and Master of Information Technology programs taught through the Electrical, Mechanical and Infrastructure departments as well as professional Masters programs. It has a substantial cohort of research higher degree students.

The School's aim is to attract and retain outstanding staff. The School is highly supportive of increasing the number of female staff.

DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

The Department of Electrical and Electronic Engineering is a vibrant community of internationally recognised researchers focused on addressing major challenges in Power Systems; Computation and Communication Networks; Electronic & Photonic Devices and Materials; and Systems Engineering. We have long-standing, strong partnerships with industry and government that support our researchers in conducting high impact research.

The Department offers both PhD and Masters level research degrees as well as the following postgraduate coursework degrees:

[Professional Master of Engineering \(Electrical\)](#)

[Master in Telecommunications Engineering \(MTE\)](#)

The Department also contributes to the Electrical Systems major in the [Bachelor of Science](#). Further information about the Department can be found under www.ee.unimelb.edu.au/

5.2 MELBOURNE SCHOOL OF ENGINEERING

www.eng.unimelb.edu.au/

The Melbourne School of Engineering is one of Australia's leading Engineering Schools and aims to be the school of choice for the highest performing students and research staff in Australia and within the Time Higher Education Supplement top twenty Schools of Engineering internationally by 2020.

5.3 THE UNIVERSITY OF MELBOURNE

The University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The University offers staff many benefits and prospective staff are encouraged to view the following web links:

www.unimelb.edu.au

www.growingesteem.unimelb.edu.au

www.unimelb.edu.au/careers

5.4 GOVERNANCE

The Vice Chancellor is the Chief Executive Officer of the University and responsible to Council for the good management of the University.

Comprehensive information about the University of Melbourne and its governance structure is available at <http://www.unimelb.edu.au/governance>.