POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

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

Research Fellow

POSITION NO	0049091
CLASSIFICATION	Research Fellow (Level A or B)
SALARY	$91,125 - $97,812 p.a. (Level A) $102,967 - $122,268 p.a. (Level B) Appointment based on qualifications and experience
SUPERANNUATION	Employer contribution of 9.5%
EMPLOYMENT TYPE	Up to two (2) full-time, fixed-term positions available for up to two and a half (2.5) years.
WORKING HOURS	Full-time (1.0 FTE)
CURRENT OCCUPANT	New
HOW TO APPLY	Online applications are preferred. Go to http://about.unimelb.edu.au/careers, under 'Job Search and Job Alerts', select the relevant option ('Current Staff' or 'Prospective Staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	Prof Girish Nair Email gnair@unimelb.edu.au *Please do not send your application to this contact*

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

The University of Melbourne

Established in 1853, the University of Melbourne is a public-spirited institution that makes distinctive contributions to society in research, learning and teaching and engagement. It's consistently ranked among the leading universities in the world, with international rankings of world universities placing it as number 1 in Australia and number 32 in the world (Times Higher Education World University Rankings 2017-2018).
https://about.unimelb.edu.au/strategy/growing-esteem

Melbourne School of Engineering

Melbourne School of Engineering (MSE) has been the leading Australian provider of engineering and IT education and research for over 150 years. We are a multidisciplinary School organised into three key areas; Computing and Information Systems (CIS), Chemical and Biomedical Engineering (CBE) and Electrical, Mechanical and Infrastructure Engineering (EMI). MSE continues to attract top staff and students with a global reputation and has a commitment to knowledge for the betterment of society.

Our ten-year strategy, MSE 2025, is our School's commitment to bring to life the University-wide strategy *Growing Esteem* and reinforce the University of Melbourne's position as one of the best in the world. Investment in new infrastructure, strengthening industry engagement and growing the size and diversity of our staff and student base to drive innovation and develop the transformative technologies of the future are all fundamental principles underpinning MSE 2025.
http://www.eng.unimelb.edu.au/about/join-mse/why-join-mse

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. A major focus of the school is to attract and retain outstanding and internationally recognised academic staff. The School is committed through strategy, culture and mentorship to increasing the number of female engineers and scientists on its 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/

Position Summary

The Control and Signal Processing (CSP) group in the Department of Electrical and Electronic Engineering comprises many internationally recognised researchers, including Fellows of learned Academies and the IEEE. In line with a significant focus on robotics and autonomy, the CSP group seeks to appoint up to two postdoctoral research fellows to work on a multidisciplinary project on perception, navigation and spatial awareness in autonomous robots, using vision or other sensing modalities, and inspired by neurological insights. The successful candidates will be expected to conduct original theoretical research on this theme and implement the resulting algorithms on a robotic testbed. It is anticipated that there will be opportunities to visit and collaborate with institutions in Boston, USA.

1. Selection Criteria

1.1 ESSENTIAL

- A PhD in the area of control, robotic navigation, optimisation or statistical signal processing, or an equivalent qualification;
- A record of quality research as evidenced by publications in leading journals and at conferences of systems and control, robotics, optimisation or signal processing, commensurate with opportunity;
- Strong theoretical and analytical skills in formulating, analysing and solving problems
- A commitment to pursue the research topics of perception, navigation and spatial awareness in autonomous robots, as described in the “Position Summary” above;
- Experience in taking the initiative, working with minimal supervision and prioritising tasks to achieve project objectives within given timelines;
- Demonstrated capacity to communicate research concepts to technical audiences.
- Ability to work as part of a team that includes research students, and junior and senior researchers.
- Good interpersonal and communication skills when interacting with students, researchers, professional staff and external stakeholders.

1.2 DESIRABLE

- Experience using mobile robots
- Familiarity with vision-based methods for mapping, localisation, and navigation
- Familiarity with information theory and stochastic control
- Experience with the implementation of numerical methods and engineering applications of optimisation techniques in real-time control of dynamical systems;
- Exposure to mathematical foundations of learning, graph theory, and combinatorial optimisation.

2. Key Responsibilities

2.1 RESEARCH – ADVANCEMENT OF THE DISCIPLINE

Conducting fundamental and application-oriented research on perception, navigation and spatial awareness in autonomous robots, consistent with the “Position Summary” above;

Following timelines and milestones in accordance with the research schedule of the project;

Preparation and publication of top-quality research papers and technical reports;

Preparation and delivery of technical presentations to technical and non-technical audiences;

Assistance in the supervision of research and coursework student projects.

2.2 TEACHING AND LEARNING

Contribution to the Department’s teaching program by giving occasional lectures, tutorials and /or laboratory-based classes, and supervision of students.

2.3 ENGAGEMENT

Attend and actively contribute to group meetings and department seminars;

Present research results at local and national meetings and conferences;

Effective liaison with external networks to foster collaborative research partnerships;

2.4 SERVICE AND LEADERSHIP

Assist with administrative duties and general laboratory duties including maintenance of the laboratory and equipment;

Assist in the preparation and submission of competitive grant applications relating to the appointee’s research program;

Perform other duties as requested by the appointee’s immediate supervisor;

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 4.

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.

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/topics/responsibilities/

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