

POSITION DESCRIPTION

School of Computing and Information Systems
Melbourne School of Engineering

Research Fellow in Human-Agent Planning

In line with the special measure H103/2014 provided for under section 12 of the Equal Opportunity Act 2010 (VIC), the Melbourne School of Engineering strongly encourages applications from suitably qualified female candidates.

POSITION NO	0043592
CLASSIFICATION	Research Fellow Grade 1 (Level A)
SALARY	\$69,148* - \$93,830 p.a. (*PhD entry Level A.6 \$87,415)
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time (1.0 FTE)
BASIS OF EMPLOYMENT	Fixed-Term position available for 2 years. Fixed term contract type: Externally Funded
OTHER BENEFITS	http://about.unimelb.edu.au/careers/working/benefits
CURRENT OCCUPANT	New
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	Dr Tim Miller Tel: +61 3 8344 1318 Email tmiller@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
joining.unimelb.edu.au

Position Summary

The School of Computing and Information Systems at the University of Melbourne is seeking a full-time Research Fellow to conduct leading-edge research and development in artificial intelligence techniques applicable to human-agent teams. The goal of the project is to advance the state-of-the-art in collaborative planning and explanation in human-agent scenarios, with a specific focus on planning in unpredicted situations. You will work primarily with Dr Tim Miller and Professor Liz Sonenberg from the School of Computing and Information Systems, Associate Professor Piers Howe from the School of Psychological Sciences, and other staff members in the laboratory (Associate Professor Adrian Peace, Dr Nir Lipovetsky). The position is full-time fixed-term for 2 years.

The project is in conjunction with our research partners at Defence Science and Technology Group (DST Group), and forms part of DST Group's *Tyche* Special Research Initiative (SRI) into trusted autonomy. The role will involve investigation of automated reasoning techniques for robust collaborative planning under uncertainty in a range of applications, and explanations of candidate plans to human team members. The candidate should be prepared for occasional interstate travel, as the research is conducted in close collaboration with our research partners.

The successful candidate will be part of a team that works collaboratively on all aspects of the project, from concepts, theoretical underpinning and design, through implementation and experimentation, and publication of results. Primary responsibilities will involve the development of novel planning and reasoning mechanisms for collaborative human-agent planning and for automated explanations of these plans, as well as experimental evaluation and publication. The successful candidate will be in the School of Computing and Information Systems in the Melbourne School of Engineering and will be expected to be an active member of the School, collaborating with other researchers. You may undertake small amounts of teaching and research supervision directly related to your area of research by prior negotiation with the research team.

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 artificial Intelligence or a relevant discipline;
- ▶ A record of quality research as evidenced by research publications in leading artificial intelligence journals and conferences commensurate with opportunity;
- ▶ A background in automated planning or related area;
- ▶ Ability to perform independent research and a commitment to interdisciplinary research;

- ▶ Excellent ability in analysing data, problem solving and maintaining accurate research records;
- ▶ Awareness of a range of techniques in human factors design and evaluation;.
- ▶ Willingness to engage with and work collaboratively with groups in the Australian Defence industry and excellent ability to work co-operatively in a multi-disciplinary team environment and liaise with stakeholders from both industry and academia;
- ▶ Excellent communication and interpersonal skills, including an ability to interact with internal and external stakeholders (academic, administrative and support staff) in a courteous and effective manner;
- ▶ Demonstrated 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 leading artificial intelligence conferences, internal forums and through first-author manuscript submissions.

1.2 DESIRABLE

- ▶ Demonstrated experience in conception, design, execution, and evaluation of human behaviour experiments;
- ▶ Experience in the completion of ethics applications and submission of grant applications;
- ▶ Experience in supervision of graduate students and/or research assistants.

2. *Special Requirements*

None

3. *Key Responsibilities*

3.1 RESEARCH – ADVANCEMENT OF THE DISCIPLINE

- ▶ Collaborate with the rest of the research team, including the Chief Investigators, research partners, and postgraduate students on new approaches for collaborative planning and explanation;
- ▶ Independently plan and carry out research on the nominated research project, with the goal of timely completion of the milestones of the project;
- ▶ Development of software prototypes and conduct of experiments;
- ▶ Publish research outcomes on a regular basis by jointly authoring articles for leading journals and conferences;
- ▶ Work towards building an independent research project;
- ▶ Liaise effectively with collaborators with a variety of internal and external stakeholders;
- ▶ Contribute to the development of the School's strong research program in artificial intelligence;

- ▶ Perform administrative functions primarily connected with the research project, including ethics applications, generating written summaries of discussions, developing detailed research plans with the project investigators and writing these into a project plan.

3.2 TEACHING AND LEARNING

- ▶ Contribute to teaching, training, scientific mentoring and supervision of students;
- ▶ Supervise coursework masters students in minor research projects as required by the School;
- ▶ Contribute to the School training programme by assisting with lectures, tutorials, marking and undertaking laboratory duties as required by the School.

3.3 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 experimental results at local, national forums.
- ▶ Attend and actively participate in lab meetings, School seminars, meetings and/or committee memberships.

3.4 SERVICE AND LEADERSHIP

- ▶ Assist with administrative duties and general laboratory duties including maintenance of the laboratory and equipment and ordering of supplies.
- ▶ 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;

3.5 OTHER

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

4. *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 service for excellence and reach the targets of Growing Esteem.

5. 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.

6. Other Information

6.1 SCHOOL OF COMPUTING AND INFORMATION SYSTEMS

<http://www.cis.unimelb.edu.au/>

The School of Computing & Information Systems undertakes research and teaching across a range of information technology disciplines including Software Engineering, Information Systems, and Computer Science. It offers a comprehensive range of IT courses at all levels, including offerings in science, engineering, and business, and is at the forefront of computing research in Australia and internationally with close links to major computing research initiatives, including the Victorian Life Sciences Computing Initiative (VLSCI), IBM Research, the Microsoft Research Centre for Social Natural User Interfaces (SNUI), and DATA61 (formerly NICTA). It was ranked 13th in the 2015 QS World University Ranking exercise by discipline.

The School's aim is to attract and retain outstanding staff available in order to maintain a leading research and teaching. We have an existing highly successful research team in the area of the appointment, a large number of PhD students, and a substantial cohort of graduate students in our coursework Masters programs.

6.2 MELBOURNE SCHOOL OF ENGINEERING

<http://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.

6.3 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

6.4 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/unisec/governance.html>.