POSITION DESCRIPTION

THE UNIVERSITY OF MELBOURNE

Department of Infrastructure Engineering
Melbourne School of Engineering

Research Fellow in Spatial Data Integration

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	0042730
CLASSIFICATION	Research Fellow Grade 1, Level A
SALARY	$ 66,809* - $ 90,657 p.a. (Level A), with a PhD entry Level A.6 $84,458 p.a.
SUPERANNUATION	Employer contribution of 9.5%
EMPLOYMENT TYPE	Full-time (fixed term) position available for 2 years Fixed Term Category Type: Externally Funded 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.
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, 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	Dr Martin Tomko Tel +61 3 9035 3298 Email tomkom@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

Position Summary

You will work within a larger research project funded by the Australian Research Council, *Self-Healing Maps*, under the guidance of Dr Martin Tomko. The project has a number of chief investigators across all aspects of Geomatics and spatial information. You will be in charge of conducting research and coordinating the efforts leading to a new generation of mechanisms supporting urban spatial data integration. You will devise novel methods enabling the autonomous and evolving discovery and rectification of errors, discrepancies and inconsistencies in spatial databases. You will apply your outstanding computational skills to demonstrate the validity of your theoretical contributions through the implementation of proof-of-concept software.

You will conduct collaborative and independent research, leading to the preparation and publication of research outcomes in conferences and journals. You will be located in the Department of Infrastructure Engineering in the Melbourne School of Engineering and will be expected to be an active member of the Department. You will undertake small amounts of teaching and research supervision directly related to your area of research, as required.

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

- PhD in Computer Science, Geomatics, or a relevant discipline;
- Demonstrated ability to perform independent research and a commitment to interdisciplinary research, evidenced by research publications in leading conferences and journals commensurate with opportunity;
- Excellent written and verbal communication skills to technical and non-technical audiences, demonstrated by presentation of research results at conferences, internal forums and through publications.
- Excellent ability in managing, analysing and interpreting extensive datasets;
- High level software development skills, including the ability to collaboratively integrate scripts and programs from other team members in Python, R, and/or Java;
- Demonstrated ability to develop new computational methods, in particular in database systems, machine learning and/or artificial intelligence;
- 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 in a team and within timelines;
- Excellent ability to work co-operatively in a multi-disciplinary team environment and liaise with associates across disciplines.

1.2 DESIRABLE

- Experience with spatial data handling, storage and analysis methods and tools, in particular in the context of urban data;
- Strong grounding in statistical methods for pattern mining and their use in standard statistical software;
- Strong background in algorithmisation and computing with spatial data, and spatial data fusion;
- Experience in supervision of postgraduate students and/or research assistants;
- Experience in a leadership role within a research or software development team.

2. Key Responsibilities

2.1 RESEARCH

- 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 program;
- Be responsible for the integration, maintenance and statistical analysis of training and test datasets;
- Regularly document and maintain the implementations of the computational methods developed, 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 Geomatics;
- Work towards building an independent research project;
- Perform other duties as requested by the appointee's immediate supervisors.

2.2 TEACHING AND LEARNING

- Contribute to teaching, training, scientific mentoring and supervision of students;
- Conduct lectures, tutorials, mark and undertake laboratory duties as required by the Department.

2.3 ENGAGEMENT

- Attend and contribute actively to project team meetings;
- Present experimental results at local and national forums;
- Attend and actively participate in departmental seminars, meetings and/or committee memberships.

2.4 SERVICE AND LEADERSHIP

- Assist with administrative duties and general laboratory duties including maintenance of the laboratory and equipment and ordering of supplies;
- Assist in the preparation and submission of competitive grant applications relating to the appointee's research program;
- 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 deserve to service 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/topics/responsibilities/

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

5. Other Information

5.1 DEPARTMENT OF INFRASTRUCTURE ENGINEERING

www.ie.unimelb.edu.au

The Department of Infrastructure Engineering combines Civil Engineering, Environmental Engineering and Geomatics in one department which creates a broad scope for research and

engineering education. The focus of the department is to solve infrastructure problems in a sustainable way.

The Department offers both PhD and Masters level research degrees:
www.ie.unimelb.edu.au/research/projects.html

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 EQUITY AND DIVERSITY

Another key priority for the University is access and equity. The University of Melbourne is strongly committed to an admissions policy that takes the best students, regardless of financial and other disadvantage. An Access, Equity and Diversity Policy Statement, included in the University Plan, reflects this priority.

The University is committed to equal opportunity in education, employment and welfare for staff and students. Students are selected on merit and staff are selected and promoted on merit.

5.5 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 www.unimelb.edu.au/unisec/governance.html.