



POSITION DESCRIPTION

School of Electrical, Mechanical and Infrastructure Engineering
Faculty for Engineering and Information Technology

Research Fellow in Spatial Analysis and Immersive Visualisation of Indigenous Engineering

POSITION NO	TBC
CLASSIFICATION	Level A Research Fellow
SALARY	\$75,289 - \$102,163p.a. (pro rata for part-time)
SUPERANNUATION	Employer contribution of 17%
WORKING HOURS	Part-time (0.8 FTE)
BASIS OF EMPLOYMENT	<p>Fixed term until 31/12/2023</p> <p><i>The University of Melbourne 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</i></p>
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Go to http://about.unimelb.edu.au/careers , select the relevant option ('Current Opportunities' or 'Jobs available to current staff'), then find the position by title or number.
CONTACT FOR ENQUIRIES ONLY	<p>Dr Martin Tomko Tel +61 457 779 908 Email tomko@unimelb.edu.au</p> <p><i>Please do not send your application to this contact</i></p>

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

Acknowledgement of Country

The University of Melbourne acknowledges the Traditional Owners of country throughout Australia. The University recognises the unique place held by Aboriginal and Torres Strait Islander peoples as the original custodians of country and their continued connection to the land, waterways, songlines and culture. The University respects all Aboriginal and Torres Strait Islander People and warmly embrace those students, staff, Elders and collaborators who identify as First Nations.

Commitment to Diversity and Inclusion

The Faculty of Engineering and Information Technology (FEIT) is committed to creating a diverse and inclusive environment that welcomes and values all people. We recognise that diversity is essential in contributing to the success of the Faculty. Women, Aboriginal and Torres Strait Islanders, the LGBTIQ+ community, people living with disability and those from a culturally and linguistically diverse background, are strongly encouraged to apply. Those seeking support in submitting an application are welcome to contact the HR team at mse-hr@unimelb.edu.au

Position Summary

You will conduct key research substantially contributing to the ARC Special Research Initiative project “*Indigenous Engineering: interpreting engineering foundations of Budj Bim*”. This project aims to document and understand how the Traditional Owners of the Budj Bim UNESCO World Heritage Cultural Landscape, the Gunditjmara people, constructed and operated the elaborate eel trapping and aquaculture systems, water channels and settlements. This project applies and develops new geospatial analytical and visualization technologies to enhance our understanding of Gunditjmara history, technological ingenuity and endeavour by revealing how the system functioned and evolved over time.

You will conduct research contributing to one or multiple pillars of this project, that include (1) geomorphological data interpretation and modelling for the analysis of the extent, structures and parameters of the Budj Bim aquaculture system and their relationships based on high resolution geospatial data and machine learning; (2) undertaking field work to ground truth analytical findings and to support geochronological analyses; and (3) developing methods for the visual communication of the findings linking traditional and contemporary engineering knowledge through culturally adapted, immersive virtual/augmented reality.

Depending on our skills and interests, you will contribute, in collaboration with PhD students and project investigators to some or all of these project components. You will be expected to establish a close rapport with the Traditional Owners of Budj Bim, the Gunditjmara people who steer this project and are to benefit from the findings. You will contribute to the administration and reporting tasks of the project, and its promotion and outreach activities.

You will be located in *Melbourne Connect*, the new spaces of the Faculty for Engineering and Information Technology, and you will be expected to be an active member of the department of Infrastructure Engineering. You may be asked to contribute small amounts of teaching directly related to your area of research, in order to develop a full academic record and competitive profile.

Remuneration of appointment will be decided based on qualifications.

1. Selection Criteria

- ▶ A Masters or PhD (or at least a submitted thesis by the time of application) in geospatial information science/geomatics, archaeology, anthropology, immersive media or computer or information science, or closely related discipline, or equivalent professional expertise;
- ▶ Ability to perform independent research as well as cooperative research in interdisciplinary teams;
- ▶ Demonstrated capacity to communicate research to technical and non-technical audiences by excellent written and verbal communication skills, including in academic publications or at conferences, commensurate with opportunity;
- ▶ Excellent ability in analysing of data, problem solving and maintaining accurate research records;
- ▶ Demonstrated initiative, responsibility and honesty, and ability to prioritise tasks to achieve project objectives within timelines;
- ▶ Excellent interpersonal and intercultural skills, including an ability to interact with internal and external stakeholders (in particular, Traditional Owners, as well as academic, administrative and support staff) in a courteous and effective manner.

1.1 DESIRABLE

- ▶ Experience in geospatial data handling (DEM, lidar), analysis and/or machine learning with imagery and digital elevation models; and/or virtual/augmented reality and immersive media development expertise;
- ▶ Experience in engagement with Traditional Owners and their knowledge systems, and willingness to engage in respectful community-led research;
- ▶ Experience in supervision of students and/or research assistants;
- ▶ Experience in the submission of grant applications, and
- ▶ Current Australian Driving Licence.

1.2 OTHER INFORMATION

- ▶ Employment in this position is conditional upon receipt and maintenance of a Working with Children Check.
- ▶ Occasional work out of ordinary hours, travel, field work.

2. Key Responsibilities

2.1 RESEARCH – ADVANCEMENT OF DISCIPLINE

- ▶ Maintain close, respectful relationships with the Gunditjmara Traditional Owners Aboriginal Corporation and the community of the Traditional Owners of Budj Bim, assuring a Traditional Owner-needs led project direction;
- ▶ Plan and carry out the research identified in the work packages of the nominated research project, as the responsible researcher but in close collaboration and effective teamwork with the chief investigators and the overseas partner investigators;
- ▶ Co-supervise PhD students and coursework research project students contributing to this project;
- ▶ Develop effective timelines and milestones for this work;
- ▶ Maintain permits and approvals for the project, and accurate and detailed records of all experiments conducted;
- ▶ Lead or participate in preparation of manuscripts for publication in peer-reviewed journals and conferences;

2.2 TEACHING AND LEARNING

- ▶ Contribute to teaching, training, scientific mentoring and supervision of students.

2.3 ENGAGEMENT

- ▶ Active participation in outreach activities with the Traditional Owners at Budj Bim and beyond.
- ▶ Effective liaison with external organizations and networks to foster collaborative partnerships.

2.4 SERVICE AND LEADERSHIP

- ▶ Active participation in future proposal development to support individual or collaborative projects in the discipline;
- ▶ Attend and actively participate in departmental seminars, meetings and/or committee memberships.

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 4.

3. *Equal Opportunity, Diversity and Inclusion*

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 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.

All MSE employees are required to behave in a manner that creates; supports and encourages an inclusive and safe work environment for all.

<https://diversity.eng.unimelb.edu.au/#home>

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:

<https://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

<https://eng.unimelb.edu.au/about/departments/school-of-electrical-mechanical-and-infrastructure-engineering>

The School of Electrical, Mechanical and Infrastructure Engineering (EMI) undertakes teaching and research across a range of disciplines that are internationally recognised for their contribution to fundamental research. EMI has several well-established industry linkages and international partnership and is building a vibrant profile of interdisciplinary research, working with industry with an aim to contribute to society. EMI offers a comprehensive range of accredited Master of Engineering and Master of Information Technology programs taught through the Electrical, Mechanical and Infrastructure departments as well as professional Masters programs. The School 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. EMI is committed to increasing the number of female engineers and scientists on its staff.

DEPARTMENT OF INFRASTRUCTURE ENGINEERING

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

Combining civil engineering, environmental engineering and geomatics in one department creates a broad scope for our research and engineering education. Our focus is to solve infrastructure problems in a sustainable way.

We address the most urgent contemporary problems of our rapidly developing industrial society, with investigations into the engineered and natural environment.

5.2 FACULTY FOR ENGINEERING AND INFORMATION TECHNOLOGY

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

FEIT has never been better positioned as a global leader, anchored in the dynamic Asia Pacific region, creating and curating knowledge to address some of the world's biggest challenges. Through our students and our relationships with communities, we can not only respond to society's needs but anticipate and create engineering and IT solutions for the future.

<https://eng.unimelb.edu.au/>

<https://eng.unimelb.edu.au/about/join-mse>

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.

<https://eng.unimelb.edu.au/about/mse-2025>

5.3 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).

The University's 10-year strategy, *Advancing Melbourne* will enable the University to contribute to advancing the state and national interest and make vital contributions to Australia's standing on the world stage. We seek to be a leading force in advancing Australia as an ambitious, forward-thinking country while increasing its reputation and influence globally. <https://about.unimelb.edu.au/strategy/advancing-melbourne>

Further information about working at The University of Melbourne is available at <http://about.unimelb.edu.au/careers>