



POSITION DESCRIPTION

Australian Urban Research Infrastructure Network (AURIN)
Faculty of Architecture, Building and Planning

AURIN Senior Software Engineer

POSITION NO	0050659
CLASSIFICATION	UOM 8
SALARY	\$105,684 - \$114,389 p.a
SUPERANNUATION	Employer contribution of 9.5%
WORKING HOURS	Full-time
BASIS OF EMPLOYMENT	Fixed-term for 3 Years (External Funding)
OTHER BENEFITS	https://about.unimelb.edu.au/careers/staff-benefits
HOW TO APPLY	Online applications are preferred. 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	Prof. Stuart Barr, AURIN Director Email stuart.barr@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 website:
about.unimelb.edu.au/careers

Position Summary

The Australian Urban Research Infrastructure Network (AURIN) project (www.aurin.org.au) is an exciting initiative tasked with delivering a state-of-the-art research infrastructure to support urban, built environment and social science researchers across the nation.

The project has developed a core e-Infrastructure framework comprising over 5000 datasets and over 100 analytical and visualization tools. AURIN supports researchers to access and analyse data in areas such as health, traffic, housing, energy/water challenges facing cities, and future city models. Many of these challenges are based on the access to and use of a wide variety of heterogeneous data sets from a range of data providers across Australia. Data providers include government departments (such as the Australian Bureau of Statistics), commercial/utility companies, universities and a range of other organisations. The AURIN e-Infrastructure and datasets are accessible to authenticated researchers through a workbench of diverse applications, via the Australian Access Federation (www.aaf.edu.au).

The Senior Software Engineer will be responsible for supporting the development, deployment, management and configuration of software systems developed as part of the AURIN project and in particular, the Australian Transport Research Cloud. The candidate should have experience in designing and developing GIS systems. As the AURIN Platform is built and deployed on virtualised infrastructure, an understanding of the NeCTAR Research Cloud (www.nectar.org.au) and commercial cloud services is essential.

The successful candidate will work in the AURIN office within the Faculty of Architecture, Building and Planning. The ability to rapidly pick up domain knowledge and configure, deploy and monitor software systems meeting potentially evolving research requirements is essential.

1. Key Responsibilities

- ▶ Lead the development and implementation of the Australian Transport Research Cloud Platform to ensure high value data, storage, compute and tools are delivered to end users via AURIN.
- ▶ Lead and develop the underlying Platform infrastructure, following best practices in software development and cloud computing, using tools to plan, extend, deploy and test software components.
- ▶ Oversee and manage the Platform Technical Team, including coaching, management and monitoring the performance of direct reports, both formally and informally.
- ▶ Develop and maintain strong technical relationships with Platform collaborators to link external analytical tools to the AURIN infrastructure, together with the AURIN Data Team to link high value data from AURIN via Metadata Catalogue and Open APIs.
- ▶ Work collaboratively with the Platform Project Manager to coordinate Platform development against requirements and assist in regular reporting of progress and milestones.
- ▶ Coordinate the design, creation and maintenance of appropriate documentation and contribute to the writing of Platform user guides and tutorials.
- ▶ Work with the AURIN Office team (including Data Lead and Contracts Officer) to support new and existing business activities.
- ▶ Provide technical advice to the AURIN Director and Data and Applications Manager as requested to assist in the scoping and assessment of new opportunities.
- ▶ Other responsibilities as assigned by the Director, AURIN.
- ▶ Occupational Health and Safety (OH&S) responsibilities as outlined in section 5.

2. Selection Criteria

2.1 ESSENTIAL

- ▶ Degree in software engineering, computer science or a strongly related discipline, with over 5 years relevant experience.
- ▶ Experience in managing complex ICT projects and personnel, ensuring the timely delivery of outputs that meet requirements.
- ▶ Experience with cloud computing technologies and architecting services and solutions in hybrid environments.
- ▶ Software engineering experience developing geospatial databases using PostgreSQL/PostGIS, CouchDB, and the establishing and maintaining of large-scale data management architectures.
- ▶ Experience in building, configuring, deploying and managing geo-spatial applications and platforms, preferably using open-source Geographical Information Systems (GIS) such as GeoServer, GeoNetwork, GeoTools, PostgreSQL/PostGIS and related standards such as WFS, WMS, GeoJSON web map libraries such as OpenLayers, Leaflet and Cesium.
- ▶ Experience in implementing and securing single sign-on systems (e.g., AAF).
- ▶ Experience in developing web services and service oriented architectures (including one or more of ReST, SOAP- and/or other GIS related).
- ▶ Experience in hands-on software development, in an open-source environment using Java, ExtJS, Linux, Apache, Tomcat, Python, JavaScript and related packages.
- ▶ Experience in open source development, testing, deployment, configuration, review and change management systems including Github, Maven, Jenkins and Docker.
- ▶ Ability to communicate and work effectively with a team of software developers in an agile environment.

2.2 DESIRABLE

- ▶ Knowledge and experience in all aspects of software development and operations; from requirements specification to code delivery, testing and long-term maintenance and support.
- ▶ Experience in running and managing applications and data on the Cloud.
- ▶ Knowledge, expertise, and experience in working in a systems support role in multi-organisational collaborative projects.
- ▶ Proven high-level conceptual, analytical and problem-solving skills.
- ▶ Excellent interpersonal skills and demonstrated ability to interact effectively with people across a range of backgrounds
- ▶ High level organisational skills and demonstrated ability to prioritise workloads and ensure the timely delivery of activities
- ▶ Experience preparing software tools for open-sourcing, including source code auditing, license compliance and community building and support.
- ▶ Experience working with web content management systems such as Wordpress and web technologies such as reverse proxies, caches, etc.

2.3 OTHER JOB RELATED INFORMATION

- ▶ A flexible approach to working hours will be necessary on occasions for systems updates, deployments and migrations. Time off in lieu will apply as per the University policy.
- ▶ This position requires the incumbent to hold a current and valid Working with Children Check.

3. Job Complexity, Skills, Knowledge

-- PROFESSIONAL STAFF ONLY --

3.1 LEVEL OF SUPERVISION / INDEPENDENCE

The incumbent will report directly to the AURIN Director in the design and development of a new, updated version of the AURIN Portal for the Australian Transport Research Cloud (ATRC) project.

The incumbent will work closely with a team of software engineers building the ATRC Portal using a range of support tools for the build environment associated with these systems (Maven/GitHub); the testing of these software systems (Jenkins); coordination and collaboration tools (Jira), and code review, deployment and configuration of the tools (Gerrit and Chef) and their various iterations from development versions (prototypes), to more mature versions of systems through to production level versions that are made available to national level researchers.

The incumbent will supervise less experienced software engineers working within the ATRC Portal development team.

3.2 PROBLEM SOLVING AND JUDGEMENT

The incumbent will work closely with both the AURIN office, AURIN technical staff and the Australian Transport Research Cloud partners, however it is expected that the incumbent will be self-motivated and be able to work with minimal day-to-day senior technical supervision. The ability to pick up domain knowledge and support the development and support of evolving software systems is essential.

3.3 PROFESSIONAL AND ORGANISATIONAL KNOWLEDGE

The incumbent must possess advanced software engineering and systems administration skills as outlined above. The ability to write technical documentation is desirable. Communication skills and blending in to a flexible software team are essential.

3.4 RESOURCE MANAGEMENT

It is important that the incumbent works in a timely manner and can work across multiple AURIN community needs concurrently.

3.5 BREADTH OF THE POSITION

The position will cover a range of urban, built environment and social science research areas and exploit a range of technologies.

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 strive 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:

<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.

6. Other Information

6.1 AUSTRALIAN URBAN RESEARCH INFRASTRUCTURE NETWORK (AURIN)

The Australian Urban Research Infrastructure Network (AURIN) is a ten-year national research infrastructure initiative funded by the Federal Government's EIF and NCRIS schemes. This initiative will see the creation of a national infrastructure to access and act upon data to support urban research and decision making, and to enhance the environmental, social and economic sustainability of the Australian urban and built environment.

AURIN will provide built environment and urban researchers, designers and planners with an open access, distributed network of aggregated datasets and information services needed to understand patterns of urban development and to model urban growth for a sustainable future.

AURIN will coordinate the collection and filtering of information from a variety of archival and dynamic data sources and provide the mechanisms, protocols and tools by which the data can be accessed, interrogated and modelled. This will, in turn, enable and support research that addresses issues of national significance, stimulate cross- and multi-disciplinary research, facilitate partnerships with industry and help translate research outcomes into national benefit.

6.2 ACTIVITIES OF THE AURIN OFFICE INCLUDE:

- ▶ Coordinating program activities.
- ▶ Subcontracting with relevant parties.
- ▶ Monitoring and reporting on performance indicators.
- ▶ Communicating and engaging with the Urban and Regional Planning Research Community and other Stakeholders.
- ▶ Developing strategic, business and project plans.
- ▶ Assessing and reviewing AURIN facilities and activities.
- ▶ For more information visit <http://aurin.org.au>

6.3 BUDGET DIVISION

The Faculty of Architecture, Building and Planning is the leading educational and research institution in the Asia-Pacific region addressing the design and realisation of inhabited environments. The Faculty actively seeks to extend the linkages between education, research and practice in the built environment, and maintains excellent and extensive relationships with members of the built environment professions, government, professional associations and the wider community.

The Faculty has over 200 staff and approximately 3000 students, one third of whom are international. It is responsible for the University's undergraduate Bachelor of Design degree, and offers majors in architecture, landscape architecture, property, construction, and urban planning.

The Faculty's graduate school, the Melbourne School of Design teaches accredited masters courses across the professional disciplines of Architecture, Construction Management, Landscape Architecture, Property, Urban Design and Urban Planning.

The MSD is distinctive from its competitors in its aim to inspire learning through interdisciplinary reflection, and its integration of research, teaching, and practice around the implications of all forms of urbanisation. With opportunities to engage in advanced studio and seminar-based learning and research, MSD students develop new perspectives, critical reflection, and modes of action to address the environmental, social and aesthetic challenges in producing sustainable centres of habitation, locally and internationally. Students take part in field trips which examine the global context of habitable environments.

The Faculty has an international reputation for excellence in research and research training and is a leader in built environment and urban research. Faculty staff are actively engaged in collaborations and partnerships both locally and globally, to produce research that responds to major social, economic and environmental challenges, as well as fundamental research into the built environment in Australia and the Asian region. Researchers address key issues, such as mitigation of natural disasters, climate change, sustainability, the future of cities, population growth and urban density; leading debate in

many of these areas. The Faculty also contributes definitive knowledge and understanding of the history, conservation and heritage of the built and natural environment, built environment practice and management, urban morphology and design research. The Faculty draws its research strength in part from its capacity to work in the multidisciplinary frame of its various built environment disciplines, as well as with colleagues in health, engineering, education, history and social sciences.

Through the MSD, we provide the highest quality research training environment, attracting the best and brightest future researchers from around the world. PhD and MPhil students have access to innovative professional development programs and generous funding support, along with excellent facilities and resources. MSD's PhD and MPhil graduates are well-rounded professionals, critical thinkers and future research leaders.

The Faculty has built strong research foundations by valuing and developing its people, rewarding excellence, and fostering a culture of enquiry, creativity and outstanding scholarship.

More information about ABP / MSD can be found at: <http://msd.unimelb.edu.au>

6.4 THE UNIVERSITY OF MELBOURNE

Established in 1853, the University of Melbourne is a leading international university with a tradition of excellence in teaching and research. The main campus in Parkville is recognised as the hub of Australia's premier knowledge precinct comprising eight hospitals, many leading research institutes and a wide-range of knowledge-based industries. With outstanding performance in international rankings, the University is at the forefront of higher education in the Asia-Pacific region and the world.

The University employs people of outstanding calibre and offers a unique environment where staff are valued and rewarded.

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

6.5 ADVANCING MELBOURNE

The University's strategic direction is grounded in its purpose. While its expression may change, our purpose is enduring: to benefit society through the transformative impact of education and research. Together, the vision and purpose inform the focus and scale of our aspirations for the coming decade.

Advancing Melbourne reflects the University's commitment to its people, its place, and its partners. Our aspiration for 2030 is to be known as a world-leading and globally connected Australian university, with our students at the heart of everything we do.

We will offer students a distinctive and outstanding education and experience, preparing them for success as leaders, change agents and global citizens.

We will be recognised locally and globally for our leadership on matters of national and global importance, through outstanding research and scholarship and a commitment to collaboration.

We will be empowered by our sense of place and connections with communities. We will take opportunities to advance both the University and the City of Melbourne in close collaboration and synergy.

We will deliver this through building a brilliant, diverse and vibrant University community, with strong connections to those we serve.

The means for achieving these goals include the development of the University of Melbourne's academic and professional staff and the capabilities needed to support a modern, world-class university. Those means require a commitment to ongoing financial sustainability and an ambitious infrastructure program which will reshape the campus and our contribution to the communities we engage with. This strategy, and the priorities proposed, is centred around five intersecting themes; place, community, education, discovery and global.

6.6 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 <https://about.unimelb.edu.au/strategy/governance>