Department of Economics  
Faculty of Business and Economics

SOFTWARE ENGINEER

POSITION NO 0061867

CLASSIFICATION Level A


SUPERANNUATION Employer contribution of 17%

EMPLOYMENT TYPE Full-time (1.0 FTE)

BASIS OF EMPLOYMENT Fixed-term (2 years)

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 Staff’ or ‘Prospective Staff’), then find the position by title or number.

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Please do not send your application to this contact

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

The Department of Economics has the vision of becoming the leading research hub in the Asia Pacific region in the area of market design. The Department is hiring a full stack developer to support research activities in the Department in the areas of market design, matching algorithm design, and auction design. The incumbent is expected to have expertise in coding (Python, SQL, Java, JavaScript, Typescript, Angular), software engineering, database design, and systems engineering as well as a knowledge of economics. The incumbent’s main role will be to support research in the Lab for the Practical Applications of Mechanism and Matching Theory (MatchLab) and the Centre for Market Design (CMD) by helping to develop and prototype new matching algorithms, auction formats, and exchanges that can be used to address fundamental allocation problems both within the university and more broadly.

**1. Key Responsibilities**

**1.1 RESEARCH AND RESEARCH TRAINING**

- Develop software applications and provide ongoing software development support for matching, auction, and market experiments at MatchLab and the CMD.
- Manage and maintain MatchLab’s code base, including MatchLab’s central code repository and databases.
- Support the development of workflows and best-practice guides related to software development and deployment, data analysis, data management, data security, and related topics.
- Maintain MatchLab’s research servers and software deployments.
- Help in the remote deployment of prototype exchanges in environments without consistent internet access.
- Train research higher-degree students in coding, development workflow and data management.
- Support, and engage in, the research initiatives of the Department of Economics, in particular, MatchLab and the CMD.
- Support applications for external research funding and preparation of manuscripts on an ad hoc basis.
- Independently carry out research on nominated research projects and work towards completion of the aims of the project.

**1.2 SERVICE**

- Participate in Department and Faculty meetings and committee work, as required.
- Undertake administrative duties as appropriate to the level of appointment, and as requested by the Head of Department and the Director of Matchlab.
- Participate in functions promoting the Department, including Open Day, graduation ceremonies and seminars as well as functions promoting MatchLab and the CMD.
- Contribute to the collegial and intellectual life of MatchLab, the CMD, the Department, Faculty and University.
1.3 OCCUPATIONAL HEALTH AND SAFETY

Adhere to the Occupational Health and Safety (OHS) responsibilities as outlined in section 5

2. Selection Criteria

2.1 ESSENTIAL

- A Master’s degree in a relevant discipline
- Ability to perform independent research and a commitment to interdisciplinary research
- Demonstrated capacity to communicate research concepts to technical and non-technical audiences
- Strong ability in analysing data, problem solving and maintaining accurate research records
- Capability for innovative research
- Demonstrated proficiency in programming languages, including Java, Python, SQL, Javascript, Typescript, and Angular
- Demonstrated experience in interacting with and creating APIs over Rest and WebSocket
- Demonstrated experience in creating frontends using Javascript frameworks (e.g., Angular)
- Demonstrated experience with development of larger-scale software development projects, including planning, design, prototyping, testing and production
- Ability to independently manage Linux servers and maintain software installations
- Demonstrated experience in designing and maintaining software and data for research involving experiments
- Familiarity with software engineering industry best practice standards
- Teaching experience at undergraduate or graduate level
- Ability to deal efficiently with administrative tasks that are relevant to the position, and to interact collaboratively with academic and administrative staff
- Excellent written and verbal communication skills

2.2 DESIRABLE

- An interest in designing and building markets, auctions, and matching systems.
- Knowledge of constraint modeling languages such as Minizinc and/or a background in integer programming techniques.
- Familiarity with Google JavaScript API and/or ArcGIS
- An ability to be a productive member of research and/or teaching teams
- A capacity to collaborate with colleagues, in order to develop and execute research projects
3. **Special Requirements**

- This position may require that the incumbent hold a current and valid Working with Children Check.
- Occasional work out of ordinary hours, travel, etc. may be required from time to time, due to teaching timetables and participation at functions and events, including Open Day and graduation ceremonies.

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 Advancing Melbourne Strategy that addresses 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 Advancing Melbourne.

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 **ORGANISATION UNIT**

The Department of Economics is a research-oriented department with strong undergraduate, masters, and PhD programs. It consists of 65 academic staff members who are part of a larger university community of economists. Its staff actively participates in the global economics research community through publications and editorial service in top journals of the profession, presentations at international conferences, and
participation in the leading professional associations in economics. The Department also incorporates the Centre for Market Design and the Lab for the Practical Applications of Mechanism and Matching Theory.

For more details about the Department see https://fbe.unimelb.edu.au/economics

For more details about the Centre for Market Design

See https://fbe.unimelb.edu.au/cmd

6.2 BUDGET DIVISION

The Faculty of Business and Economics at the University of Melbourne has been preparing students for exciting and challenging careers in industry since 1924. We have developed an outstanding reputation, locally and internationally, for the quality of our teaching and research. The Faculty has an active board of business leaders, government representatives and community leaders who contribute to the implementation of our vision.

Organisational Structure

The Faculty is home to Melbourne Business School (MBS) and to six teaching and research departments:

- Accounting
- Business Administration
- Economics
- Finance
- Management and Marketing
- Melbourne Institute of Applied Economic and Social Research

The Faculty has the following student and academic support centres:

- Academic Support Office
- Student Employability and Enrichment
- Research Development Unit
- The Williams Centre for Learning Advancement
- Quality Office

The Faculty is supported by the following central services:

- Finance
- Human Resources (including OHS)
- Marketing and Communications
- Service Level and Facilities Management

The faculty also hosts two University-wide initiatives:

- The Melbourne School of Professional and Continuing Education (MSPACE) which provides support to all Academic Divisions for their existing professional, continuing and executive education programs, and operates with a specific whole-
of-institution mandate to significantly expand the University's professional, continuing and executive education offerings.

- The Melbourne Entrepreneurial Centre (MEC) which brings together a number of programs to focus a range of activities aimed at developing an entrepreneurial culture at the University of Melbourne.

Our Programs

There are about 10,000 students enrolled in undergraduate and graduate degrees within the Faculty. The Bachelor of Commerce is one of the most sought-after business courses in Australia. From 1 May 2013 all graduate programs in business and economics are offered through Melbourne Business School. Melbourne Business School offers a full suite of professional masters programs for those with little work experience right through to the MBA suite. It is also the home of leading research masters degrees and the PhD.

Our Graduates

Since the Faculty was established it has produced over 53,000 graduates. Many of our alumni now occupy senior positions in business, government and academia, in Australia and around the world.

Further information about the Faculty is available at www.fbe.unimelb.edu.au.

6.3 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.

6.4 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.

6.5 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 https://about.unimelb.edu.au/strategy/governance.