



POSITION DESCRIPTION

Melbourne Bioinformatics

Faculty of Medicine, Dentistry and Health Sciences

Software Developer

POSITION NO 0043939

CLASSIFICATION PSC 7

SALARY \$88,171 - \$95,444 p.a.

SUPERANNUATION Employer contribution of 9.5%

WORKING HOURS Full-Time

BASIS OF EMPLOYMENT Fixed Term for 12 months
Fixed term type: Externally funded

OTHER BENEFITS <http://about.unimelb.edu.au/careers/working/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:
about.unimelb.edu.au/careers

Position Summary

The Melbourne Genomics Health Alliance (MGHA) is a major healthcare initiative pioneering the use of clinical genomics in the State of Victoria. The Software Developer will be involved in the development and improvement of various applications and systems for MGHA, including: building systems that interact with RESTful APIs; improving existing applications; and developing systems to support end-to-end testing. These systems will facilitate the storage and manipulation of DNA sequencing information, and will be critical pieces of infrastructure within MGHA, supporting the work of numerous clinical institutes and pathology laboratories. The position is predominantly back-end development with a focus on integration and automation. The successful applicant will join an existing team of software developers and bioinformaticians and work closely with the MGHA project team.

The Software Developer reports to the Lead Bioinformatician for Clinical Genomics at Melbourne Bioinformatics, at The University of Melbourne.

1. Key Responsibilities

- ▶ Work with a team of developers to design and implement methods, tools, platforms, and infrastructure used by MGHA for clinical genomics as priorities and needs arise.
- ▶ Apply modern software development methodologies to develop a robust, scalable, verifiable, and accreditable solution that meets the needs of multiple stakeholders.
- ▶ Develop end-to-end automated testing of software systems developed and used by MGHA.
- ▶ Interact and collaborate with researchers to establish appropriate requirements and provide advice and support for research projects.
- ▶ Apply quality assurance and testing processes to the software development process.
- ▶ Write documentation, including standards, procedures, and data definitions.
- ▶ Assist with the deployment, delivery, and support of software systems.
- ▶ Occupational Health and Safety (OH&S) and Environmental Health and Safety (EH&S) responsibilities as outlined in section 5.

2. Selection Criteria

2.1 ESSENTIAL

- ▶ Degree in a relevant discipline, such as Computer Science, Bioinformatics, or Software Engineering, or equivalent industry experience.
- ▶ Software development experience using Python, and an ability to learn new languages and tools as needed.
- ▶ Competency in the UNIX environment and the development of shell scripts.
- ▶ Familiarity with interacting with RESTful API services.
- ▶ Experience with database programming (SQL) and administration, including practical experience with database systems such as MySQL and PostgreSQL.
- ▶ Experience integrating databases with other applications.
- ▶ Experience working with large datasets.
- ▶ Familiarity with software version control, and experience using source control tools such as Git.
- ▶ A sound understanding of modern software engineering practices.

- ▶ Able to develop secure solutions and maintain the confidentiality of sensitive data.
- ▶ Ability to work within a dynamic software development team and interact effectively with project stakeholders from a variety of disciplines.
- ▶ Ability to be responsive to change and adapt to changing direction and/or priorities.
- ▶ Effective written and verbal communication skills. Particularly important is the ability to understand and communicate technical requirements in the context of a multidisciplinary team.

2.2 DESIRABLE

- ▶ Experience or interest in science, health and genomics.
- ▶ Familiarity with health messaging standards such as HL7 and FHIR or similar.
- ▶ Continuous integration development experience.
- ▶ Regression testing development experience.
- ▶ Experience working with Laboratory Information Management systems (LIMS).
- ▶ Experience working with genomic bioinformatic pipelines.
- ▶ Experience working with variant curation systems.

3. Job Complexity, Skills, Knowledge

3.1 LEVEL OF SUPERVISION / INDEPENDENCE

The Software Developer will report to the Lead Bioinformatician for Clinical Genomics at Melbourne Bioinformatics and will collaborate with MGHA. The developer will be expected to work towards specified tasks with set deadlines, in a collaborative manner, demonstrating a high level of initiative and motivation. The developer will actively engage with other members of the software development team, and will seek guidance from senior team members where necessary.

3.2 PROBLEM SOLVING AND JUDGEMENT

The Software Developer is expected to have excellent technical problem solving skills and will be required to provide an informed judgment on the design and implementation of software systems required by the Melbourne Genomics Health Alliance. The developer will be required to document their technical actions and decisions in a manner which is suitable for a non-specialist audience. The developer must understand and respect the confidential nature of human genomic data, and exercise due care and diligence in their treatment of the data.

3.3 PROFESSIONAL AND ORGANISATIONAL KNOWLEDGE

The Software Developer will have detailed knowledge of modern software engineering principles and will be required to apply them in their daily work. The developer will be expected to understand the overall goals and structure of MGHA and the objectives of Melbourne Bioinformatics.

3.4 RESOURCE MANAGEMENT

The Software Developer will demonstrate good time management skills and be expected to produce results according to set deadlines. The developer will be expected to estimate the resources needed for various development tasks and provide input into project management decisions.

3.5 BREADTH OF THE POSITION

The position is focussed on the design, implementation and deployment of software systems in the context of clinical genomics. Software development systems require a breadth and depth of knowledge of many aspects of computing. In many circumstances the developer will also be required to obtain domain specific knowledge.

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:

<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 ORGANISATION UNIT

<http://www.melbournebioinformatics.org.au>

Melbourne Bioinformatics is hosted by The University of Melbourne.

Melbourne Bioinformatics operates a large scale computing facility with technical and software experts, bioinformaticians and computational biology experts to help users with their research involving life sciences computation. The significant training program supports students and researchers and a growing number of subscribers to Melbourne Bioinformatics's services who see the value in getting direct access to the computers and the expertise to advance their research quickly.

Melbourne Bioinformatics is host to the EMBL Australia Bioinformatics Resource, with Director, Assoc Prof Andrew Lonie also Director of this Resource.

This world-class institution in the heart of Australia's bio-medical and biotechnology precinct offers to:

- solve academic and industrial bioinformatics, computational biology and bio-engineering problems
- speed up research through direct access to petascale supercomputing systems, software and computational biology experts in one centre
- skill up teams in new computational biology techniques and tools through a comprehensive training program
- give further advice regarding data handling and management and system administration
- collaborate on any outreach programs aimed at building the life sciences computation community in Australia.

Since its establishment in 2009, Melbourne Bioinformatics has enhanced Victoria's international standing in Life Sciences by positioning researchers at the cutting edge of this growing discipline, nurturing future leaders in these fields and creating a magnet to attract industry to Victoria. The benefits for the broader Victorian community are coming from the generation of new knowledge which is leading to improved medical and health outcomes, better food and agriculture and novel developments in engineering.

6.2 BUDGET DIVISION

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

The Faculty of Medicine, Dentistry & Health Sciences has an enviable research record and is the University of Melbourne's largest faculty in terms of management of financial resources, employment of academic and professional staff, teaching of undergraduate and postgraduate (including research higher degree) students and the conduct of basic and applied research. The Faculty's annual revenue is \$630m with approximately 55% of this income related to research activities.

The Faculty has a student teaching load in excess of 8,500 equivalent full-time students including more than 1,300 research higher degree students. The Faculty has approximately 2,195 staff comprising 642 professional staff and 1,553 research and teaching staff.

The Faculty has appointed Australia's first Associate Dean (Indigenous Development) to lead the development and implementation of the Faculty's Reconciliation Action Plan (RAP), which will be aligned with the broader University – wide plan. To enable the Faculty to improve its Indigenous expertise knowledge base, the Faculty's RAP will address Indigenous employment, Indigenous student recruitment and retention, Indigenous cultural recognition and building partnerships with the Indigenous community as key areas of development.

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 GROWING ESTEEM, THE MELBOURNE CURRICULUM AND RESEARCH AT MELBOURNE: ENSURING EXCELLENCE AND IMPACT TO 2025

Growing Esteem describes Melbourne's strategy to achieve its aspiration to be a public-spirited and internationally-engaged institution, highly regarded for making distinctive contributions to society in research and research training, learning and teaching, and engagement. <http://about.unimelb.edu.au/strategy-and-leadership>

The University is at the forefront of Australia's changing higher education system and offers a distinctive model of education known collectively as the Melbourne Curriculum. The new educational model, designed for an outstanding experience for all students, is based on six broad undergraduate programs followed by a graduate professional degree, research higher degree or entry directly into employment. The emphasis on academic breadth as well as disciplinary depth in the new degrees ensures that graduates will have the capacity to succeed in a world where knowledge boundaries are shifting and reforming to create new frontiers and challenges. In moving to the new model, the University is also aligning itself with the best of emerging European and Asian practice and well-established North American traditions.

The University's global aspirations seek to make significant contributions to major social, economic and environmental challenges. Accordingly, the University's research strategy *Research at Melbourne: Ensuring Excellence and Impact to 2025* aspires to a significant advancement in the excellence and impact of its research outputs. <http://research.unimelb.edu.au/our-research/research-at-melbourne>

The strategy recognises that as a public-spirited, research-intensive institution of the future, the University must strive to make a tangible impact in Australia and the world, working across disciplinary and sectoral boundaries and building deeper and more substantive engagement with industry, collaborators and partners. While cultivating the fundamental enabling disciplines through investigator-driven research, the University has

adopted three grand challenges aspiring to solve some of the most difficult problems facing our world in the next century. These Grand Challenges include:

- ▶ Understanding our place and purpose – The place and purpose grand challenge centres on understanding all aspects of our national identity, with a focus on Australia's 'place' in the Asia-Pacific region and the world, and on our 'purpose' or mission to improve all dimensions of the human condition through our research.
- ▶ Fostering health and wellbeing – The health and wellbeing grand challenge focuses on building the scale and breadth of our capabilities in population and global health; on harnessing our contribution to the 'convergence revolution' of biomedical and health research, bringing together the life sciences, engineering and the physical sciences; and on addressing the physical, mental and social aspects of wellbeing by looking beyond the traditional boundaries of biomedicine.
- ▶ Supporting sustainability and resilience – The sustainability and resilience grand challenge addresses the critical issues of climate change, water and food security, sustainable energy and designing resilient cities and regions. In addition to the technical aspects, this grand challenge considers the physical and social functioning of cities, connecting physical phenomena with lessons from our past, and the implications of the technical solutions for economies, living patterns and behaviours.

Essential to tackling these challenges, an outstanding faculty, high performing students, wide collaboration including internationally and deep partnerships with external parties form central components of Research at Melbourne: Ensuring Excellence and Impact to 2025.

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