Position Description

Position Title:	Software Lead
Salary Range:	MCRI Professional & Administrative salaries – Level 7-9
Reporting Manager:	Dr Simon Sadedin
Direct Reports:	None
Home Group:	Bioinformatic Methods

Who are we?

The Murdoch Children's Research Institute (MCRI) is home to significant scientific discoveries. We believe there is an answer, a cure or a better treatment for every childhood condition — and we're determined to find it.

We are a diverse team of world-leading researchers, doctors, engineers, and hardworking professionals in corporate and scientific services from all corners of the world with one shared goal — to transform child health worldwide.

Our strength lies in our partnership and co-location with The Royal Children's Hospital and the University of Melbourne — the Melbourne Children's Campus. This rare model amplifies opportunities to quickly translate research into clinical care.

At MCRI, you'll also find our subsidiary organisation, the Victorian Clinical Genetics Services (VCGS), a specialist childhood, prenatal and adult genetics service. VCGS provides an integrated genetic consultation, counselling, testing and diagnostic support service to children, adults, families and prospective parents.

Together, we share a powerful vision: re-imagine the future of child health.

What is it like to work for us?

We are committed to ensuring a positive working environment that values all backgrounds and experiences. We cultivate an inclusive culture that is underpinned by equal opportunity for all and a culture based on respect, consideration and dignity. We are also committed to developing our people and fostering an environment where learning and development is central to our staff reaching their full potential.

About the Bioinformatics Methods Team

The Bioinformatics Methods (BM) team includes software engineers, bioinformaticians, data scientists and genomics experts. Together, the group builds and makes accessible methods for genomics analysis to enable MCRI researchers to extract the maximum possible information from their genomic data. We specialise in working at the forefront of genomics technology and data science to ensure that the most advanced methods are made available and usable to researchers at MCRI. We collaborate with research groups within Australia and around the world to drive the frontiers of what is possible. The team has already deployed substantial software infrastructure supporting genomics research including an instance of *seqr*, a leading rare disease research application based on distributed search technology.

The Bioinformatics Methods team is linked to the Victorian Clinical Genetics Services (VCGS), one of Australia's leading advanced genetic testing laboratories with many staff collaborating or holding dual appointments with the clinical laboratory. Sitting at the nexus of research translation within the Royal Children's Hospital campus, the team offers a unique opportunity to put data science to work in helping people suffering from debilitating genetic disorders.

Position Overview

The Software Lead will support a range of documented and established existing big data applications, along with associated infrastructure that has been developed and deployed by the team. Drawing on support from experienced members of the team, the Software Lead will become familiar with techniques for large scale data analysis, analytics and machine learning employed in the genomics field, with the goal of enabling direct engagement in development of further such applications. The Software Lead will play a key role in ensuring sound technical architecture is employed in the group's systems, and in ensuring a high quality software methodology is employed.

The Software Lead will work closely with the Laboratory Head, the Interpretation Lead and other stakeholders from within MCRI to identify requirements and map them onto technical solutions. As a senior member of the group, they will also contribute to recruitment of other technical engineering staff and, depending on experience, have opportunity to oversee these staff from both a managerial and / or technical point of view.

Key Accountabilities

- Operational deployment, management and oversight of the software infrastructure for the BM group, including MCRI's Seqr instance
- Develop and maintain data engineering solutions to solve software problems both within the group and customers of the group
- Development, Architecture , design , implementation and support of software used by the group using modern software practises. This includes security principles are adhered to throughout the software stack to ensure the group's data privacy and data security are strongly maintained.
- Emerging tools and technologies in the field of bioinformatics and software are evaluated and adopted where appropriate. This includes but not limited to cloud pipeline and workflows, AI/ML.
- Maintaining collaborative relationships with both internal and external collaborators, including the Centre for Population Genomics and the Broad Institute to ensure technical alignment and successful integration of the BM team's contributions
- Recruiting and supervision of engineering resources including ongoing leadership and development of staff
- Overall quality, availability and accessibility of operational infrastructure deployed by the BM group
- Maintaining operational software costs to budget

Selection Criteria

- A relevant degree in Computer Science, Software Engineering, Data Science, or a related field.
- Proven experience in software development, including a strong track record of designing, developing, and deploying complex applications and infrastructure.
- Experience with computing infrastructure technologies including cloud platforms, containerisation, and container orchestration and infrastructure as code frameworks
- Demonstrated ability to lead and collaborate on technical projects, for example, oversight of technical teams, mentoring junior staff, or examples of externally collaborative work
- Strong proficiency in at least one of Python, TypeScript, Java (or JVM languages)
- A demonstrated ability and openness to learn new a broad range of software technologies and frameworks
- Knowledge of software development lifecycle practices include source control, CI/CD and automated testing frameworks
- Experience with bioinformatics, genomics or other scientific applications a plus

Conditions of Employment

- Working with Children & National Police Clearance (if appointed) in compliance with the Victorian Governments Child Safety Standards
- The right to reside and work in Australia and you meeting any applicable visa conditions

Health, Safety & Wellbeing

- We are committed to providing and maintaining a working environment which protects the health, safety and wellbeing of our people, partners and the community
- Employees conducting duties on behalf of MCRI are expected to meet the environment, health and wellbeing requirements and responsibilities specifically required for the role
- We are committed to supporting children in their right to be safe and adhere to the responsibilities we have to ensure their protection and safety as per the Child Safety Standards Policy

- Specified positions may be subject to medical review to ensure that the inherent requirements of the role can be undertaken safely.