SOFTWARE ENGINEER

DEPARTMENT/UNIT  Mechanical and Aerospace Engineering

FACULTY/DIVISION  Faculty of Engineering

CLASSIFICATION  HEW Level 6

DESIGNATED CAMPUS OR LOCATION  Clayton campus

ORGANISATIONAL CONTEXT

At Monash, work feels different. There’s a sense of belonging, from contributing to something groundbreaking – a place where great things happen. You know you’re part of something special and purposeful because, like Monash, your ambitions drive you to make change.

We have a clear purpose to deliver groundbreaking intensive research; a world-class education; a global ecosystem of enterprise – and we activate these to address some of the challenges of the age, Climate Change, Thriving Communities and Geopolitical Security.

We welcome and value difference and diversity. When you come to work, you can be yourself, be a change-maker and develop your career in exciting ways with curious, energetic, inspiring and committed people and teams driven to make an impact – just like you.

We champion an inclusive workplace culture for our staff regardless of ethnicity or cultural background. We have also worked to improve gender equality for more than 30 years. Join the pursuit of our purpose to build a better future for ourselves and our communities – #ChangeIt with us.

The Faculty of Engineering is the #1 Engineering School in Australia*, renowned worldwide for the quality and calibre of our teaching, research and graduates. We offer a comprehensive selection of undergraduate, graduate, postgraduate and higher degree by research programs in a wide range of engineering disciplines. Our research activities provide a platform for establishing a thriving educational enterprise and our staff are committed to creating a dynamic learning environment. The research activities range from fundamental studies to research with a strong applications orientation. To learn more about the Faculty of Engineering, please visit our website.

The Department of Mechanical and Aerospace Engineering forms part of the #1 Engineering Faculty in Australia*. We educate the next generation of leaders in the profession of mechanical
engineering, generate new knowledge and insight into the processes that govern our discipline, and provide service to the community, our profession and industry. We are the largest department within the Faculty in terms of student numbers, offering a range of undergraduate, Masters and PhD programs. Research is a vital part of the Department’s activities and we are renowned for our expertise and world-class facilities. We strive to provide a welcoming and open culture that is inclusive of students and staff of diverse genders, sexes, sexualities, religions and cultures, and people with disabilities. We welcome applications from individuals representing these diverse groups. In accordance with Monash University’s commitment to Athena Swan principles, we particularly encourage applications from females. Monash University supports staff with young children and caregiving responsibilities through a range of programs, policies and resources (www.monash.edu/gender-equity/parents). To learn more about our Department and the work we do, please visit our website.

The Maintenance Technology Institute (MTI) is a joint initiative between BHP Billiton and Monash University (One of the world’s top 50 universities*) aimed at providing comprehensive mining industry focused research and development to achieve optimum plant and equipment across Australia and overseas. We have a highly integrated, multidisciplinary team of technical specialists with a proven track record and we draw on support and capabilities from an extensive network of industry and academic alliances. To learn more about the MTI and the work we do, please visit our website.

**POSITION PURPOSE**

This Research Software Engineer will work as a part of a multi-discipline team working on high level consulting, designs and applied research on heavy engineering equipment used in the mining industry, focusing on analysing large volumes of data collected from systems installed and maintained by MTI.

The position will be responsible for design, development and maintenance of application software through the provision of technical expertise, and will contribute to a range of activities including version updates, supporting end users and assisting in managing the general software and computing needs of the Institute.

**Reporting Line:** The position reports the Senior Principal Engineer and Team Leader: Software Design

**Supervisory Responsibilities:** Not applicable

**Financial Delegation:** Not applicable

**Budgetary Responsibilities:** Not applicable

**KEY RESPONSIBILITIES**

1. Develop and maintain custom data analysis software, providing improvement suggestions and supporting the development of new software modules as required

2. Manage the roll-out of new software versions/modules on various client sites, including managing data transfer for utilities and mechanisms

3. Set up appropriate database structures and maintain SQL databases at MTI and client sites for the storage of various datasets, including preserving functionality, ensuring the setup of backup strategies and schedules, and archiving old data to improve operational efficiency

4. Assist in managing general software and computing needs of MTI, including software licensing, engaging with central IT functions for computing requirements
5. Provide sound and timely specialist advice, support and training to MTI staff, supporting MTI staff to efficiently use databases, software and other general computing facilities

6. Contribute to and support a range of processes such as policy development, governance, management decision-making, change management, compliance, quality and performance reporting

7. Keep abreast of developments, activities and protocols in the areas of expertise through liaison with staff and peers, literature reviews, and attendance at meetings and seminars

8. Build and sustain effective working relationships with a network of colleagues, clients and other stakeholders to support and facilitate efficient service delivery

9. Comply with university policy, procedure and protocols in relation to the nature of the research being conducted and the management of software and systems

10. Other duties as directed from time to time

KEY SELECTION CRITERIA

Education/Qualifications
1. The appointee will have:
   - A degree in mechanical or mechatronics or structural engineering with subsequent relevant experience or equivalent qualifications or research experience.

Knowledge and Skills
2. Substantial experience in the delivery of quality software development and construction practices, including application development, identification of test needs, testing and testing techniques, web development tools, configuration/release management, coding standards, code reuse and documentation

3. Experience in .NET Core, ASP.NET Core, Entity Framework Core, SignalR, OpenID Connect (OIDC) and OAuth

4. Experience in Angular and a solid understanding of TypeScript and Reactive programming with RxJS (or ReactiveX)

5. Development skills in iOS / Android platforms

6. Sound experience in Microsoft SQL databases and SQL scripting

7. Experience in version control with Git

8. Excellent organisational skills, including the ability to set priorities, manage time and plan work to meet deadlines

9. Demonstrated ability to work as an effective member of a team as well as the ability to exercise high levels of independence, judgement and initiative

10. Proven ability to adhere to protocols, standards and guidelines, including a thorough understanding of confidentiality, privacy and research ethics principles as required

11. Highly-developed written and verbal communication skills, including the ability to interact with a diverse range of stakeholders

12. Ability to quickly understand business requirements and translate these into well-engineered programs
OTHER JOB RELATED INFORMATION

- Travel to other campuses of the University, as well as interstate and international locations, may be required
- There may be a requirement to work additional hours from time to time
- There may be peak periods of work during which taking of leave may be restricted

GOVERNANCE

Monash University expects staff to appropriately balance risk and reward in a manner that is sustainable to its long-term future, contribute to a culture of honesty and integrity, and provide an environment that is safe, secure and inclusive. Ensure you are aware of and adhere to University policies relevant to the duties undertaken and the values of the University. This is a standard which the University sees as the benchmark for all of its activities in Australia and internationally.