POSITION DESCRIPTION

Position Title: Machine Learning Systems Engineer

Organisation Unit: School of Mechanical & Mining Engineering/Mining3

Position Number: TBA

Type of Employment: Full time, 12 month fixed term with possibility of renewal depending on funding

Classification: HEW Level 6

THE UNIVERSITY OF QUEENSLAND

The University of Queensland (UQ) contributes positively to society by engaging in the creation, preservation, transfer and application of knowledge. UQ helps shape the future by bringing together and developing leaders in their fields to inspire the next generation and to advance ideas that benefit the world. UQ strives for the personal and professional success of its students, staff and alumni. For more than a century, we have educated and worked with outstanding people to deliver knowledge leadership for a better world.

UQ ranks in the world’s top universities, as measured by several key independent ranking, including the Performance Ranking of Scientific Papers for World Universities (43), the US News Best Global Universities Rankings (52), QS World University Rankings (47), Academic Ranking of World Universities (55), and the Times Higher Education World University Rankings (60). UQ again topped the nation in the prestigious Nature Index and our Life Sciences subject field ranking in the Academic Ranking of World Universities was the highest in Australia at 20.

UQ has an outstanding reputation for the quality of its teachers, its educational programs and employment outcomes for its students. Our students remain at the heart of what we do. The UQ experience – the UQ Advantage – is distinguished by a research enriched curriculum, international collaborations, industry engagement and opportunities that nurture and develop future leaders. UQ has a strong focus on teaching excellence, winning more national teaching excellence awards than any other in the country and attracting the majority of Queensland's highest academic achievers, as well as top interstate and overseas students.

UQ is one of Australia’s Group of Eight, a charter member of edX and a founding member of Universitas 21, an international consortium of leading research-intensive universities.

Our 50,000-plus strong student community includes more than 13,000 postgraduate scholars and more than 12,000 international students from 144 countries, adding to its proud 240,000-plus alumni. The University has about 7,000 academic and professional staff and a $1.8 billion annual operating budget. Its major campuses are at St Lucia, Gatton and Herston, in addition to teaching and research sites around Queensland and Brisbane city. The University has six Faculties and four University-level Institutes. The Institutes, funded by government and
industry grants, philanthropy and commercialisation activities, have built scale and focus in research areas in neuroscience, biomolecular and biomedical sciences, sustainable minerals, bioengineering and nanotechnology, as well as social science research.

UQ has an outstanding track-record in commercialisation of our innovation with major technologies employed across the globe and integral to gross product sales of $11billion+ (see http://uniquest.com.au/our-track-record).

UQ has a rapidly growing record of attracting philanthropic support for its activities and this will be a strategic focus going forward.

Organisational Environment

With an excellent reputation for quality graduate training and research performance, the School of Mechanical and Mining Engineering delivers a comprehensive range of programs in aerospace, materials, mechanical, mechatronic and mining engineering.

Boasting strong student enrolments in professionally accredited programs, combined with world-class researchers and facilities, we are focused on strengthening our position in the engineering community. We will develop global solutions to contemporary issues and mentor the leaders of tomorrow by attracting the brightest minds and fostering a truly innovative and collaborative work environment.

The School recognises and values equity and diversity, and encourages applications from any individual who meets the requirements of this position, regardless of gender, sexuality, race, ethnicity, religion, disability, age or other protected attributes. The School strives to provide an inclusive working environment, and along with the University, is committed to supporting staff with family and caring responsibilities by providing policies, programs and initiatives to help balance work and family responsibilities.

For more information about the School, please visit: http://www.mechmining.uq.edu.au/

Information for Prospective Staff

Information about life at UQ including staff benefits, relocation and UQ campuses is available at - http://www.uq.edu.au/current-staff/working-at-uq

DUTY STATEMENT

Primary Purpose of Position

To work as part of a research team to support research conducted in the School’s Smart Machines Group associated with the project “Real-time ore mining face grade determination using hyperspectral imaging techniques”.

Duties

Duties and responsibilities include, but are not limited to:

- Engage in independent and/or team research in data modelling and machine learning associated with Hyperspectral imaging.
• Develop software components applicable to hyper spectral image analysis in C++ to a professional standard.

• Where appropriate, publish results in high quality outlets in collaboration with colleagues.

• Manage projects under the broad direction of the project leader.

• Play a key role in driving improvements in research quality and delivery of projects.

• Provide engineering and scientific input for research projects.

• Develop innovative and creative concept solutions.

• Make a strong contribution to ensure the science and engineering conducted in projects is of a high standard and meets stakeholder needs.

• Maintain strong and continuous communication links with your supervisor and other members of the project team ensuring that reporting is of the highest quality and that there is a clear understanding of project outcomes and deliverables.

• Any other duties as reasonably directed by your supervisor

**Other**

Ensure you are aware of and comply with legislation and University policy relevant to the duties undertaken, including:

• the [University’s Code of Conduct](#)

• requirements of the Queensland occupational health and safety (OH&S) legislation and related [OH&S responsibilities and procedures](#) developed by the University or Institute/School

• the adoption sustainable practices in all work activities and compliance with associated legislation and related University [sustainability responsibilities and procedures](#)

• requirements of the Education Services for Overseas Students Act 2000, the National Code 2007 and associated legislation, and related [responsibilities and procedures](#) developed by the University

**Organisational Relationships**

The position reports to Professor Ross McAree.
SELECTION CRITERIA

**Essential**

- Bachelor degree in a Computer Science or Mechatronic, Mechanical, Electrical or Software Engineering or related field with subsequent relevant experience; or extensive experience and specialist expertise in the area; or an equivalent combination of relevant experience and/or education/training
- Demonstrated competence in software development and demonstrated experience in the C++ programming language.
- Demonstrated ability to
  - develop effective professional relationships.
  - communicate effectively with people from diverse technical, and non-technical background.
  - work collaboratively with colleagues from different disciplines as well as with administrative and technical staff.
- Demonstrated high level
  - drive and enthusiasm,
  - interpersonal, written and verbal communication skills.
- An enjoyment of, and interest in, contributing to high quality research including contributing to publication of high quality research papers in relevant industry journals.

**Desirable**

- Experience in the delivery of practical solutions to complex geospatial and distributed computing challenges.
- Experience in field-based sensor systems, such as LiDAR, GPS/GNSS, and/or hyperspectral imaging systems and the fusion of data from these systems.
- Practical understanding of Linux-based systems, and computer networking.
- Experience in research or relevant industry experience in an area aligned with current research activities of the Smart Machines Group.
- A passion for implementing new technology in the primary resources sector, and an interest in collaborating with “start-up” companies.

The University of Queensland values diversity and inclusion and actively encourages applications from those who bring diversity to the University. Please refer to the University’s Diversity and Inclusion webpage (http://www.uq.edu.au/equity) for further information and points of contact if you require additional support.

This role is a full-time position; however flexible working arrangements may be negotiated.

Accessibility requirements and/or adjustments can be directed to the contact person listed in the job advertisement.