# Position Details

## Research Scientist/Engineer- CSOF6

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| The following information is for applicants | |
| Advertised Job Title | Research Scientist in Quantum Software Engineering |
| Job Reference | (to be entered by your Recruitment Consultant) |
| Tenure | Indefinite Full-time |
| Salary Range | AU$121,455- AU$142,321 per annum (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Sydney |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian Citizens Only * Australian/New Zealand Citizens and Australian Permanent Residents * All Candidates |
| Position reports to the | Qinghua Lu |
| Client Focus – Internal | 80% |
| Client Focus – External | 20% |
| Number of Direct Reports | 0 |
| Enquire about this job | Dr Qinghua Lu via email at qinghua.lu@csiro.au |
| How to apply | Apply online at <https://jobs.csiro.au/>  Internal applicants please apply via **Jobs Central**  If you experience difficulties when applying, please email [careers.online@csiro.au](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**Role Overview**

The role of Research Scientist staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. The Research Scientist may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

As part of the SE4AI research team, the scientist in this position is expected to conduct research and prototype development relevant to the quantum system development lifecycle, working together with the Quantum team in DSS group.

The key duties are to create software engineering methods, specifically requirements, co-design with conventional software computing and software testing aligned with Data61’s research strategies in novel and practical ways, collaborate with colleagues and customers, and keep a healthy and safe work environment. The deliverables of this role are research-driven by impacts, including high-quality scientific papers, technical reports, and usable systems for customers or the community.

Ideally, the scientist has the research background and skills in the software engineering research field, with high-quality papers published in major software engineering conferences and journals, with the capability of proposing new ideas and prototype development.

**Duties and Key Result Areas**

* Liaise with clients to determine their needs and take personal responsibility for client satisfaction.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Present results in a meaningful format, prepare reports for clients and/or write research papers for publication.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Undertake in experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design, or as required.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with research colleagues across a range of disciplines.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s research objectives.
* Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.

**Selection Criteria**

**Essential**

***Under CSIRO policy only those who meet all essential criteria can be appointed.***

1. A PhD in a relevant field such as software engineering or computer science.
2. Demonstrated ability to undertake original, creative and innovative research by generating and pursuing novel ideas and solutions with publications in top tier software engineering or related venues.
3. Demonstrated track record in high quality research with impactful outcomes.
4. Experience to work effectively in a research team and provide supervision and mentoring to research students.
5. Demonstrated high level of oral and written communication skills with the ability to represent Data61 research externally to both academia, government and industry.

**Desirable**

1. Research experience in one of more of the following software engineering sub-fields: software architecture and quality, requirements engineering, software development processes or empirical software engineering.
2. Research experience in Quantum Computing.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.
* **Resource Management/Leadership:** Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.
* **Judgement and Problem Solving:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments.
* **Independence:** Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.
* **Adaptability:**Demonstrates flexibility in thinking and adapts to, and manages, the increasing rate of organisational change by adjusting strategies, goal and priorities.

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

Include if relevant:

* The successful candidate will undertake a pre-employment background check. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* *If you have any queries regarding finalising the Duties and Key Result Areas or the Special Requirements for this position, please consult with In-business HR or the Talent Acquisition Team.*

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and Hyperlink for BU if relevant for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted