



POSITION DESCRIPTION

Research Projects – CSOF4

Role summary for potential applicants

Advertised Job Title:	Proof Engineer
Reference Number:	56287
Classification:	CSOF4
Salary Range:	AU \$80,833 to AU \$91,451 plus up to 15.4% superannuation
Location:	Kensington, Sydney, NSW
Tenure:	Specified Term of 2 years
Relocation assistance:	Will be provided to the successful candidate if required.
Applications are open to:	<input type="checkbox"/> Australian Citizens Only <input type="checkbox"/> Australian Citizens and Permanent Residents Only <input checked="" type="checkbox"/> All Candidates <i>For Specified Term positions, we will accept applications from Temporary Residents with working rights for the length of the term, who do not require sponsorship.</i>
Functional Area:	Research Projects
% Client Focus - Internal:	20%
% Client Focus - External:	80%
Reports to the:	Senior Proof Engineer
Number of Direct Reports:	0

Role Overview:

The role of Research Projects staff in CSIRO is to collaborate in scientific activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental and observational work, and in carrying out the more practical aspects of the work. At senior levels, Research Projects staff may be involved in providing consulting services, science management and/or industry liaison.

The role of Proof Engineer in particular is to develop and expand formal models and proofs and other infrastructure for the development of both verified software itself and of new methodology for producing verified software at greater scale, depth, and speed.

Duties and Key Result Areas:

- Develop, maintain, and improve formal models and proofs using theorem proving technology such as Isabelle/HOL and HOL4.
- Design and implement new approaches to formal modelling and proof.
- Seek opportunities to improve infrastructure and project organisation.
- Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO's reputation.
- Work as part of a multi-disciplinary, often regionally dispersed research team, to carry out tasks under limited direction in support of scientific research.
- Work collaboratively with colleagues within your team, the business unit and across CSIRO, to reach objectives.
- Allocate activities, direct tasks and manage resources to meet objectives.
- Foster open communication, provide coaching and on-the-job training to both support and research colleagues, as required, and provide recognition and acknowledgement for staff achievements.
- Adapt methods/equipment/software/concepts/ ideas in support of existing and further research.
- Adhere to the spirit and practice of CSIRO's Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
- Other duties as directed.

Selection Criteria:

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

Pre-Requisites:

1. **Education/Qualifications:** Relevant Bachelors/Masters Degree &/or equivalent experience in Computer Science, Mathematics, or similar.
2. **Communication:** Excellent communication skills, both written and oral, including the ability to anticipate the interests and knowledge level of an audience and present information and feedback accordingly.
3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.
4. **Adaptability:** The ability to effectively manage a number of competing priorities simultaneously, and carry out non-routine tasks under limited direction.
5. **Problem Solving:** Proven ability to investigate underlying issues of complex and ill-defined problems and develop appropriate responses by adapting/creating and testing alternative solutions.

Essential Criteria:

1. Programming experience, ideally in functional languages (ML/Haskell).
2. An interest in good engineering practice (version control, automated builds, etc.).
3. The ability to understand current research in computer science.
4. Demonstrated ability to solve complex problems with a high degree of autonomy.
5. Experience with mentoring or training other engineers.
6. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out tasks autonomously in support of scientific research.
7. Demonstrated ability & willingness to contribute novel ideas and approaches in support of scientific

investigations.

Desirable Criteria:

1. Experience in formal modelling and proof, preferably with theorem proving tools like Isabelle/HOL and HOL4.
2. Experience with systems programming, e.g., C, assembly, OS code.
3. High level of mathematical maturity.

As Australia's Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to:

- Excellent science
- Inclusion, trust & respect
- Health, safety & environment
- Delivery on commitments.

In your application and at interview you will need to demonstrate alignment with these behaviours.

Data61 Values:

Great Impact: We focus our valuable resources on areas where we can lead globally and have large impact for Australia, to aid our future prosperity and independence.

Mastery: We are fearless, curious and we improve every day. We strive to excel in research, technology and business, and to work with the best in the world.

Co-Creation of Value: Everything we do involves co-creation with our network: team, customers and partners. Generously empowering their success is central to our success.

Ownership of Results: We jointly hold ourselves accountable for our actions. We do this via trust and commitment.

People and their Differences: We embrace the creativity that comes from the diversity of our people.

Agility and Flexibility: We view the changing world as an opportunity. This requires agility and flexibility in everything we do; everything changes, except our constant desire to adapt.

Tell it Straight, with Respect: We say what we mean, mean what we say, and do not mislead, obfuscate or spin. We're direct and always respectful.

Special requirements:

Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx>

Other Information:

How to Apply

Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **56287**. Internal applicants please apply via 'Jobs Central' in SAP (click 'Recruitment')

Please load your CV (Maximum 2MB). You may also be required to respond to some screening questions.

If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: csiro-careers@csiro.au.

Referees: Please provide contact details of two previous supervisor or academic/professional referees

in your resume/CV. We will ask your permission before making contact.

Contact: If after reading the position details above you require more information please contact:

Dr June Andronick via email: June.Andronick@data61.csiro.au

Please do not email your application directly to Dr Andronick. Applications received via this method will not be considered.

About CSIRO

Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.

Find out more! www.csiro.au.

We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you.

Find out more! [CSIRO Balance](#)

CSIRO Data61 In today's data-focused world, there's no doubt that numbers count. [Data61](#) are the largest data innovation group in Australia, a connector that brings together technology innovators, businesses and universities to transform Australian industry and to help solve our greatest challenges. A CSIRO business, we are creating our data-driven future.

Our commitment to you

We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you. We emphasise an individual's growth and development which is supported by interacting and learning from world leading scientists and engineers, who provide the opportunity to challenge, transform and innovate new ideas.

CSIRO's Data61 is committed to sourcing the brightest and best talent to become part of the Data61 family, which contributes to creating Australia's data driven future.