# Position Details

## Research Projects- CSOF6

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| The following information is for applicants | |
| Advertised Job Title | Senior Robotics Engineer (Mechatronic) |
| Job Reference | 87846 |
| Tenure | Indefinite  Full-time |
| Salary Range | AU$117,917- AU$131,423per annum (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Pullenvale, QLD |
| 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 | Team Leader, Robotic Design Team |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Nick Panitz via email at Nick.Panitz@csiro.au or phone +61 7 3327 4229 |
| 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 Projects staff in CSIRO is to collaborate in scientific and technological activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental, observational or technology development 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 and technology management and/or industry liaison.

The Robotics and Autonomous Systems Group at CSIRO are one of the leading robotics and autonomous systems research groups in the world, based in Brisbane, Queensland, Australia. We are part of the Cyber-Physical Systems Research Program at CSIRO’s Data61 Business Unit. We develop foundational and applied research for a broad range of domains including; agriculture, advanced manufacturing, mining, biodiversity, and biosecurity. Our systems provide scientific, social, and economic benefits through cutting-edge science, deeper understanding of natural and built environments, increased productivity and human safety, and augmentation of human capabilities.

The Robotics Design team are looking for an experienced mechatronics engineer who is passionate about field robotics and delivering meaningful projects with our industry and research partners. The ideal candidate has a passion for design & development, demonstrated knowledge of and experience in bringing complex systems to fruition, and the ability to deliver results as part of a dynamic, cross-functional team. The role will be highly rewarding working with research scientists and engineers on world leading research in the areas of robotics and automation.

### Duties and Key Result Areas

* Working with the internal team and external partners to identify and propose new capabilities
* Assessing and selecting potential systems and technologies to achieve the capabilities
* Planning development priorities for project deliveries and strategic capabilities
* Conduct engineering analysis to drive design decisions
* Compare concepts via iterative design, prototype, assembly, and testing
* Develop system architectures and interfaces
* Plan system verification and validation testing
* Collaborate with members of a diverse project team and external partners to ensure research directions can lead to lasting impact in application domains
* Carry out associated tasks while working collaboratively and honestly with internal and external colleagues, clients, and partners to develop and progress challenging but realistic research plans for a range of research projects

CSIRO requires National Police Checks to be provided by preferred applicants for all new positions. Where matters are disclosed in a National Police Check, only those that are relevant to the position and the ability of the applicant to perform the role will be taken into account. Accordingly it is important to consider, and include in the position description, all duties and responsibilities relevant to the position, to assist with the consideration of any record that may be disclosed through the National Police Check process. For example:

­ Financial and asset management responsibilities, including financial delegations.

­ Access to personal or other sensitive information, whether of CSIRO staff and affiliates, or members of the public.

­ Access to commercially sensitive information of CSIRO and/or research or commercial partners.

­ Requirement to represent CSIRO externally, including in public forums, with industry or the research sector or with Government.

­ Access to hazardous materials.

­ Supervision and other management responsibilities.

­ Working with children and other vulnerable persons.

­ Operate a vehicle or machinery requiring a licence

* Apply specialist expertise to solve complex problems within a discipline or across a diverse range of projects.
* Be responsible for activities such as developing and delivering novel technologies, developing and implementing project plans, analysing, validating and reporting results within the constraints of various project plans.
* May extend existing scientific knowledge of experimental design or digital experiences via achievements which facilitate the development of new perspectives in a field, or fields of, research and/or technology.
* Address ill-defined problems and make critical choices between options that require knowledge of the most recent scientific and/or technological developments or novel methodologies.
* Maintain an awareness of trends in research, technology and cross-functional technological/scientific innovations to target opportunities for uptake of research or technology.
* Initiate projects in consultation with clients or CSIRO project teams and secure necessary resources.
* May lead or coordinate CSIRO’s contribution to collaborative projects involving other organisations.
* Ensure that client or end-user needs are met and typically have a leading role in the effective transfer of new technology to industry/community.
* Be accountable for the quality of the results delivered, the alignment of the project activities with the business, research and/or technology directions.
* Play a key advisory role in decisions concerning scientific and/or technological direction.
* Maintain a sound understanding of the client’s business or a market opportunity, negotiate work requirements with clients or project teams and ensure that client and project team needs are met.
* Act as a trusted advisor and demonstrate creativity to determine and anticipate client or project needs.
* Identify and adapt quickly to changes in client or project needs and changes in the external environment.
* Gain the support of influential clients for the goals of their project(s).
* Represent the organisation in external scientific or technological forums as required and may establish and lead such forums.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, regionally dispersed research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. Relevant bachelor’s degree in Engineering
2. Strong understanding of electro-mechanical systems with experience in design and creation
3. Advanced CAD modelling and mechanical design skills
4. Sound knowledge of kinematics, structural design, and actuation

## **Desirable**

1. Applied practical experience with robots and robotic hardware
2. Strong understanding of robotic sensors, including proprioception and perception
3. Strong understanding of real-time, dynamic system control, real-time simulation and modelling
4. Demonstrated experience with design for both additive and subtractive manufacturing processes
5. Experience with SolidWorks
6. Understanding/experience with finite element analysis (FEA) and topology optimisation
7. Skills and experience in engineering project/team management
8. Demonstrated involvement in client interactions and maintaining good client relations

## **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 team 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, goals and priorities.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

Include if relevant:

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Robotics and Autonomous Systems Group](https://research.csiro.au/robotics/) 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