# Position Details

## Research Projects- CSOF4

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| The following information is for applicants | |
| Advertised Job Title | Engineer - Human-centred Robot Manipulation |
| Job Reference | 86890 |
| Tenure | Indefinite |
| Salary Range | AU$89,680 - AU$101,459 per annum plus up to 15.4% superannuation |
| Location(s) | Brisbane, Queensland |
| 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 | Group Leader |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | david.howard@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).

**Child Safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

### Role Overview

The role of Research Engineer Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO's strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You will be involved in working towards the delivery of exciting projects while having 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. You may be involved in leading research projects or undertaking work that has an impact on the development of scientific or technical knowledge.

The Robotics and Autonomous Systems Group at Data61/CSIRO are looking for an enthusiastic and skilled Research Scientist to lead cutting-edge research at the intersection of soft robotics, computational design, and modelling/simulation. The role primarily focuses on developing high performance soft robotics manipulation systems for uptake by industry. The main focus will be on instantiating software-plus-hardware solutions to soft robotic manipulator design: creating powerful design software that allows for principled exploration and optimisation in challenging soft robotic design spaces, supported by experimentally-derived data-driven models to create a range of high-performance actuators through multi-material 3D printing. As part of the position, CSIRO will offer training on its machines and access to its labs (3D printing, mechatronics, electronics), as well as access to its multi-material 3D printer and custom filament production facility. The successful candidate will create new, highly functional morphologies (structure, shape, and material composition) for novel soft robots, and contribute to the growth of this exciting research area.

**Duties and Key Result Areas:**

* Develop new soft robotic manipulators, combining state of the art techniques across soft robotics (design, modelling, optimisation, fabrication, and characterisation), manipulation, machine learning, and knowledge of soft materials and structures.
* Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* Collaborate with members of a diverse project team and external partners to ensure research directions can lead to lasting impact in application domains.
* Produce high quality scientific and/or engineering papers suitable for publication in high quality journals and for presentation at top ranked international conferences.
* Work effectively as an integral member of a multi-disciplinary research team, to undertake independent scientific investigations.
* 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.
* Ensure experiments are established in accordance with research design, within agreed timelines and budget.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Contributing to other activities and projects as required.

### Selection Criteria

**Essential**

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

* High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences
* Demonstrated experience in one or more of: design, fabrication, modelling, experimentation, and evaluation of soft robotic prototypes, or machine learning in the design space.
* Experience with 3D printing and CAD.
* Experience in scientific programming using C++, Python or equivalent language.
* A track record of high-quality peer-reviewed publications as primary author in high impact journals and/or top-tier international conferences.
* The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.
* A significant record of science innovation and creativity plus the ability to apply well developed research skills to scientific investigations.

**Desirable:**

1. Knowledge of machine learning, specifically the ability to develop predictive models to identify good designs/features from experimental data
2. Experience using source code versioning systems such as Git.

## **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:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others’ reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

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.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Data61](https://www.csiro.au/en/about/people/business-units/Data61) 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