# Position Description

## Postdoctoral Fellowship– CSOF4

The following information is for applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in Responsible Innovation (AI & Robotics) |
| Job Reference: | 59367 |
| 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 Only* [x]  All Candidates
 |
| Percentage of Client Focus - Internal: | 80% |
| Percentage of Client Focus - External: | 20% |
| Reports to the: | Responsible Innovation Research Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries: | Dr Justine Lacey via email: Justine.lacey@csiro.au |
| Contact Details For Applying: | Call 1300 984 220 or email csiro.online@csiro.au  |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon  |

## Role Overview:

**Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.

Postdoctoral Fellows **are appointed for up to three years or part time equivalent** and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.

**Responsible Innovation Initiative**

The Postdoctoral Fellow will be located with CSIRO’s Responsible Innovation (RI) Initiative. The RI Initiative is a research program that is designed to build social science capability in the comprehensive assessment of the benefits, risks and uncertainties posed by new areas of science and technology. The RI Initiative is closely aligned with CSIRO’s [Future Science Platforms](file:///C%3A%5CUsers%5Cobr181%5CDownloads%5Crepresent%20an%20investment%20in%20science%20that%20underpins%20innovation%20and%20has%20the%20potential%20to%20help%20reinvent%20and%20create%20new%20industries%20for%20Australia.) (FSPs) which represent an investment in science that underpins innovation and has the potential to help reinvent and create new industries for Australia. These platforms offer opportunities to work on frontier science and increase collaboration by attracting the best researchers to work with us.

**Ethics & Governance of AI, Robotics and Autonomous Design**

The focus of this Postdoctoral Fellow is aligned with science underway in the [Active Integrated Matter FSP](https://research.csiro.au/aim/). This is a new technology platform combining materials, robotics, processing and sensing technologies, and autonomous science to lead ground-breaking advances at the interface of big data, advanced autonomous systems, and materials science. Within this context, the overarching goal of this Postdoctoral Fellow position is to examine **the ethics and governance of artificial intelligence (AI), robotics and autonomous systems**.

The Postdoctoral Fellow will work in a cross disciplinary environment, supervised by a principal social scientists, but with access to the Autonomous Design Test Bed led by Dr David Howard. [Autonomous Design](https://research.csiro.au/aim/home/aims-research-test-beds/autonomous-design/) is poised to deliver solutions through the use of evolutionary robotics, to generate robots and components that are formed though, and tailored to, their environment. However, it is also recognised that this domains of frontier science and technology poses ethical and governance questions about how we can best navigate and manage the development and deployment of these opaque complex adaptive systems, along with the proliferation of algorithmic decision-making, autonomous systems and machine learning. Developing an understanding of and embedding the critical ethics and governance aspects of this science and technology in this early stage research is a critical pathway to responsible innovation.

**Aim of the Project**

It is envisaged that the outcomes of this research will have both research and practical applications. By bringing their own expertise in ethics and/or social science methodologies, the Postdoctoral Fellow will apply current approaches and methods in responsible innovation to the development of AI, robotics and autonomous systems methodologies.

The purpose of this is to assess whether those existing social science methods and ethics frameworks on responsible innovation are well equipped to identify and manage emerging risks and challenges of AI, robotics and autonomous design systems, or whether there are gaps which need to be addressed. The Postdoctoral Fellow will have access to laboratories where AI, robotics and autonomous design research is underway so that responses can be generated, tested and applied in these domains.

The Postdoctoral Fellow will be required to conduct their review and research in line with current international developments in this field but with a view to developing a specific ethics and governance framework for CSIRO’s research in AI, robotics and autonomous design. This work will contribute to a broader responsible research governance framework for CSIRO’s broader agenda of science and innovation for the nation.

## Duties and Key Result Areas:

* Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* Conduct a series of research activities (supported by career and skills development activities and active mentoring) to explore the ethics of emerging science and technologies with specific reference to the broad domains of artificial intelligence, robotics and autonomous design.
* Undertake regular reviews of relevant literature.
* Produce high quality scientific papers suitable for publication in quality journals, and present those at conferences as agreed with your supervisor.
* Contribute to the development of innovative concepts and ideas for further research.
* Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans.
* Work collaboratively with colleagues within your team, the business unit and across CSIRO.
* Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Undertake an appropriate training and development program developed by CSIRO.

Other duties as directed.

**CSIRO’s postdoctoral training program**is developed between the Postdoctoral Fellow and a CSIRO scientist or engineer. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

<http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships>

## CSIRO Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).**
6. **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.

## Pre-requisites:

1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as ethics, philosophy, science and technology studies (STS) sociology, social science or similar discipline*.*

***Please note:*** *To be eligible for this role you must have* ***no more than 3 years*** *of relevant postdoctoral experience.*

1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.**
2. **Publications: A record of publications in quality, peer reviewed journals.**
3. **Collaboration:** A history of professional and respectful behaviours and attitudes in a collaborative environment.

**Essential Criteria:**

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

1. Demonstrated knowledge and skills in one or more of the following areas:
	1. Ethics of science and technologies;
	2. Governance of science and technologies;
	3. AI, robotics and/or autonomous systems;
	4. Societal aspects of digital technologies, data mining and machine learning.
2. Demonstrated experience in applying ethical principles or frameworks in practice/applied settings.
3. Experience of or willingness to work in multi-disciplinary teams and/or large programs or projects.

## Desirable Criteria:

1. Experience with and/or knowledge of ethics and governance issues in related fields such as computer or data science, information and communication technology development and/or technology development more broadly.

To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 *($82,450).* Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

## Special Requirements:

Appointment to this role may be subject to conditions including security/national police/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <https://ielts.com.au/>

## About CSIRO:

We imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

Find out more about CSIRO [Land and Water](https://www.csiro.au/en/Research/LWF)