# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicantsT | |
| Advertised Job Title | CSIRO Science Digital Postdoctoral and Engineering Fellowship |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$92,624 – AU$101,459 pa (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Sydney, Brisbane, Melbourne or Adelaide |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact [careers.online@csiro.au](mailto:careers.online@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

**Science Digital** aims remake the process of scientific discovery by enhancing research, development and commercilisation with artificial intelligence. From the formation of a hypothesis to the design and running of an experiment, AI can both accelerate and alter the process of inquiry.

Science Digital CERC Fellows will be embedded in agile teams and hence they will adopt suitable research methods in their work as Science Digital researchers and engineers. Working with larger teams to be constantly running experiments and learning for the wider mission of remaking the process of scientific discovery.

CSIRO aim to recruit a cohort of **Science Digital CSIRO Early Research Career (CERC) Postdoctoral and Engineering Fellowships.** These fellowships provide opportunities to scientists and engineers who have completed their doctorate or masters and have less than three years relevant postdoctoral or postmasters work experience.

These **Science Digital CERC Fellowships** aim to develop the next generation of future leaders of AI enhanced scientific discovery through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system to enhance scientific discovery.
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence in the scientific discovery process.
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition.
* Opportunities to develop effective agile research methodologies as part of agile software development teams to advance new forms of scientific discovery.
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

The Science Digital CERC Fellow will be **appointed for three years**, contribute to research and prototype development, and will be at the forefront of novel and world class research in our new **Science Digital** initiative. The Science Digital CERC Fellow will collaborate with other CSIRO researchers.

As an agile postdoctoral researcher or engineer, you will be expected to demonstrate creativity (e.g. development of novel machine learning methods and models), flexibility (e.g. adjusting existing research methods, technologies and forming ensembles of approaches) and research leaderships (e.g. taking the germ of an idea and rapidly experimenting to showcase its potential to the wider team).

The role will contribute to Data61’s vision of both driving the development and adoption of Artificial Intelligence in Australia and reinventing science, using digital technologies to revolutionise the future of scientific discovery. In Science Digital the technical, cross-disciplinary, and ambiguous problems teams face are considered as opportunities and intellectual stimulations for further research. As such, in this position a Science Digital CERC Fellow is expected to carry out team research within the research program in which they are appointed, employing an effective agile research methodology, and to carry out activities to develop their research expertise relevant to their particular field of research.

Data61 are seeking to employ Science Digital CERC Fellows to revolutionise the future of scientific discovery using artificial intelligence. In this role, the Science Digital CERC Fellow will deliver research projects with high degree of agility to rapidly create and test AI innovations for scientific enquiry. The Science Digital CERC Fellow will have the opportunity to work in multi-disciplinary teams with other scientists and engineers, product owners, design thinking practitioners and designers working on a common mission.

We expect the Science Digital CERC Fellow to learn and grow to become an agile researcher by the end of this project. We will embed the Science Digital CERC Fellow in the rich Data61 Science Digital ecosystem, where the Fellow will have a supporting and enriching experience. These role will deliver research projects and activities on topics including:

1. developing novel AI (Machine Learning, Robotics, Natural Language Processing, Computer Vision etc.) methods, including enabling techniques and algorithms, to enable new forms of scientific discovery
2. developing AI algorithms and models to enhance scientific experimentation and testing
3. developing deep domain science driven AI methods.

The Digital Science Fellow will collaborate in developing a stream of research and development that contributes to new software platforms and high-quality articles acceptable to high-rank conferences.

Data61 provides a good supporting environment for commercialising research results and building innovation through start-ups and active community engagement. The Science Digital CERC Fellow will have an opportunity to collaborate with Data61 partners within the Australian and international ecosystem and address the challenging problems in reinventing scientific discovery.

### Duties and Key Result Areas:

Under the supervision of senior research scientists and engineers, the Science Digital CERC Fellow will:

* Carry out innovative, impactful Science Digital research of strategic importance to CSIRO’s Data61 that will, where possible, lead to novel and important scientific outcomes.
* Work collaboratively as part of a trans-disciplinary, often regionally dispersed agile team of researchers, engineers and designers, to carry out tasks in support of CSIRO’s scientific objectives.
* Through agile development, recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research;
  + Recognise and exploit opportunities for innovation the Science Digital program and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Other tasks and duties as required from time to time.

The Science Digital CERC Fellow learning, development and training programis developed between the Science Digital CERC Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellow’s 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

## **Selection Criteria**

#### Essential

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

1. A doctorate (or will shortly satisfy the requirements of a PhD). The doctorate must be in a relevant discipline area to Science Digital (CERC Postdoctoral Fellow). Or hold an engineering degree plus a Master of Science (MSc) or Master of Engineering (MEng) qualifications plus equivalent levels of original and significant contributions to research and development to that expected of someone of a new PhD graduate (CERC Engineering Fellow).   
   **Please note**: To be eligible for this role you must have **no more than 3 years** (or full time equivalent) of relevant research experience.
2. Demonstrated experience in in conducting research activities in a topic relevant to improving the process of scientific discovery (including, but not limited to, Machine Learning, Robotics, Natural Language Processing and Computer Vision)
3. Demonstrated ability to work effectively as part of a research team, development team or product team
4. Demonstrated experience in designing and assembling prototype software systems.
5. 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.

**Desirable:**

1. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
2. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations
3. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
4. Demonstrated interest in pursuing research activities in an agile manner, within a wider team, focused on a larger mission (beyond classical individual independent research).
5. **The ability to work effectively as part of a trans-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

## **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.

To be appointed as a Science Digital CERC Fellow within CSIRO, candidates and required to hold a doctorate (or will shortly satisfy the requirements of a PhD) OR hold a STEM degree plus a Master of Science (MSc) or Master of Engineering (MEng) qualifications (or will shortly satisfy the requirements of a masters) plus equivalent levels of original and significant contributions to research and development to that expected of someone of a new PhD graduate. The doctorate, masters or experience must be in a relevant discipline area, such as such as applied mathematics, statistics, software engineering, machine learning, natural language processing, or computer vision.

**Please note:** To beeligible for this role you must have no more than 3 years (or full-time equivalent) of postdoctoral research experience*.*

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.

* 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 the successful candidate is not an Australian Citizen or Permanent Resident, they 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/

**Our value proposition**

We want Science Digital CERC Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

Find out more about our CSIRO Early Research Career (CERC) Fellow Experience Employee Value Proposition (EVP) [here](https://www.csiro.au/en/careers/postdoctoral-fellowships).

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

[Data61 Business Unit - CSIRO](https://www.csiro.au/en/about/people/business-units/Data61)

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

* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted