# Position Details

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

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| The following information is for applicants | |
| Advertised Job Title | CSIRO Postdoctoral Fellowship in Developing a Trusted AI Agronomist |
| Job Reference | 93595 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$92,624 to AU$101,459 pa (pro-rata for part-time)  plus up to 15.4% superannuation |
| Location(s) | Brisbane |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All candidates |
| Position reports to the | Team Leader |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Petra Kuhnert via email at petra.kuhnert@data61.csiro.au or phone 0438 740 655 |
| 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

**CSIRO Early Research Career (CERC) Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant research experience. These Fellowships aim to develop the next generation of future leaders of the innovation system through:

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

CERC Fellows **are appointed for three years or full time equivalent.**

**Research Domain:**

CSIRO’s Data61 is at the forefront of digital approaches in hybrid modelling that leverages off machine learning and statistical theory to find solutions to complex problems. Data61 team members who conduct research in this domain work closely with a range of internal and external stakeholders both in Australia and globally. The successful candidate will work with us to develop an AI Agronomist, a modelled solution of crop production that will enable actors working in the agricultural domain to navigate the complex agricultural landscape challenged by its harsh environment and climate risk.

**Who you will be working with:**

One aspect of this role is to link collaborators in hybrid modelling, statistics and machine learning, UX and the agricultural domains. We will be exploring developing a prototype tool, the AI Agronomist that will house model outputs and explore graphics and visualisations appropriate to the end user to ensure information is presented clearly and transparently to enable trust and uptake.

Further, the successful applicant will work with team members in the StatML group and Agriculture Business unit of CSIRO. Here the goal is to collaborate to adapt and create a prototype AI Agronomist that can be trialled with different end users.

**What to expect:**

We love to make real-world impact with our science innovation and technology advancements! Anticipate that new ideas and outputs should be aligned with applications, client needs and will almost certainly have impact beyond their academic interest.

### Duties and Key Result Areas

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + 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.
  + Contribute and lead research papers in areas relating to the design, implementation and uptake of the AI Agronomist.
  + Respect and enthusiasm for a multi-disciplinary and diverse team environment.
  + Contribution to impact creation through the deployment of the AI Agronomist to a relevant platform to enable broader use.
  + Carry out research investigations requiring originality, creativity and innovation.
  + Record, manage, and analyse data/information using relevant domain data science techniques.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Other duties as directed.

The CERC Fellow learning, development and training programis developed between the 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, such as data science, machine learning (ML) and AI, computer science or engineering. 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. Evidence of designing and building industry-relevant products underpinned by MLAI technologies and ensuring functionality.
3. Ability to observe, research and interpret concepts for creating processes or technology relevant to the research question and/or develop improvements to enhance speed up and interoperability.
4. 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.
5. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
6. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.
7. **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.**

## **Desirable**

1. Experience and/or understanding of model emulation methods (e.g. neural networks), their usage and how they are developed focussing specifically on machine learning approaches.
2. Knowledge and/or understanding of UX/design experience and evidence of working with stakeholders or working groups to identify user requirements and understand the context of the tool used.
3. Knowledge of agricultural models like APSIM or familiarity with the crop production cycle.
4. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.

## **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 to this CERC Fellowship role within CSIRO, candidates will be expected to commence employment by 31 January 2024. Candidates are also required to have **submitted** their doctoral thesis 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 ($89,680). 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 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 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. Visit [CSIRO Online](http://www.csiro.au/) and <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