# 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 Imaging and Computer Vision |
| Job Reference | 79840 |
| Tenure | Specified Term of 3 years  Full-time |
| Salary Range | AU$89,926 to AU$98,504 pa + up to 15.4% superannuation |
| Location(s) | Sydney, NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens, Australian Permanent Residents and Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible onshore candidates) |
| Position reports to the | Team Leader |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Dadong Wang via email at Dadong.Wang@csiro.au or phone +61 2 9325 3223 |
| 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 area 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

**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 full-time or equivalent.**

The Postdoctoral Fellow will join the Imaging and Computer Vision (ICV) Research Group at Data61, the data and digital specialist arm of Australia’s national science agency, to build innovative solutions for Australia. In this role, the Fellow will join an internationally recognised multidisciplinary team to design and develop innovative privacy preserving machine learning methods for transforming images and videos using the concept of differential privacy while maintaining image quality and utility.

The Fellow will have opportunities to develop collaboration with domestic and international partners and will be exposed to different expertise and develop solutions in the linked field of Artificial Intelligence (AI), machine learning, image analysis, computer vision and data privacy. The Postdoctoral Fellow will be equipped to grow into a leading researcher and will access world class facilities at CSIRO and engage with our government and industry collaborators. The Fellow will contribute to this exciting project with a strong background in computer vision, machine learning, data privacy, quantitative analysis, and programming

### Duties and Key Result Areas:

Under the direction of senior research scientists and engineers, CERC Fellows will:

* + Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
  + Undertake regular reviews of relevant literature and patents.
  + Produce high quality scientific and/or engineering papers suitable for publication in quality journals, for client reports and granting of patents.
  + Prepare appropriate conference papers 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.
  + Collaborate with members of a diverse project team and external partners to ensure research directions can lead to lasting impact in application domains.
  + Identify opportunities that could potentially generate intellectual properties through research.
  + Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
  + Proactively undertake development to grow effective researcher capabilities to support career goals.
  + Adhere to the spirit and practice of CSIRO’s Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* 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

## **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.

## **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 computer vision, machine learning, artificial intelligence, computer science, cryptography and information security/privacy, electrical engineering, statistics, data analytics, applied mathematics and other relevant disciplines.

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

1. Solid knowledge and demonstrated experience/skills in one or more of the following areas: computer vision, machine learning, artificial intelligence, differential privacy framework, applied cryptography, and the ability to understand and develop mathematically-founded machine learning algorithms and their implementation using deep learning platforms such as TensorFlow/TensorFlow Lite, PyTorch, Caffe etc.
2. Proficiency in Python, C++ or equivalent.
3. A sound history of publication in high-rank peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
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.

## **Desirable:**

1. Experience with OpenCV and other computer vision packages.
2. Background in developing software on both Windows and Linux.
3. Previous experience in GPU accelerated computing with C and C++.
4. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

To be appointed to this CERC Fellowship role within CSIRO, candidates will be expected to commence employment by 30 June 2022. To be appointed as a CERC Fellow within CSIRO, candidates are 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 (AU$87,068). 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 the following conditions:

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people 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. To find out more visit us [online](http://www.csiro.au/)!

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

**About Data61:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](https://www.data61.csiro.au/).