# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist – Imaging and Computer Vision |
| Job Reference | 73651 |
| Tenure | Specified Term of 3 years (Full-time)  |
| Salary Range | AU$98,735 to AU$106,848 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 currently residing in Australia
* Australian temporary residents currently residing in Australia (visa sponsorship may be provided to eligible candidates)
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| 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 |
| 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 or call 1300 984 220. |

### Role Overview

The role of Research Scientist 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 have 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.

The Research Scientist will be responsible for developing innovative machine learning methods (deep learning) for the analysis of images and videos and will have access to research projects involving object detection, classification and tracking. Aspects involving spatio-temporal modelling and tracking are of high importance for our research. The role will be a part of the Imaging and Computer Vision Group at the CSIRO’s Data61, joining 600 other data science scientists building innovative solutions for Australia. The Research Scientist will be supported by a large team comprising many post-graduate students and be involved in their supervision.

### Duties and Key Result Areas:

* Develop innovative concepts, theories, tools and techniques related to the analysis of videos and still images.
* Harness the growing volume of publicly available data sources, as well as work on establishing proprietary datasets in collaboration with our partners.
* Liaise with clients to determine their needs and take personal responsibility for client satisfaction.
* Under limited direction, assist in the planning and preparation of research proposals and carry out research investigations, requiring originality, creativity and innovation.
* Present results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
* Represent CSIRO at leading national and international conferences and forums.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Undertake in experimental and/or observational research activities, often requiring the supervision and/or training of others to ensure experiments are established in accordance with research design, or as required.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, often regionally dispersed research team, and business unit to carry out tasks in support of CSIRO’s scientific objectives.
* 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.

## **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:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **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 PhD (or an equivalent combination of qualifications and research experience) in a relevant field such as computer vision, machine learning, artificial intelligence, computer science, electrical engineering, statistics, data analytics, applied mathematics and other relevant disciplines.
2. Demonstrated experience in computer vision and machine learning such as object detection, classification and tracking, 3D reconstruction, visual localization and mapping, semantic vision with reasoning about the 3D world, or understanding visual scenes over time, deep learning methodology applied to image and video analysis.
3. Strong experience with scientific computing platform, deep learning framework, and programming languages such as Python, C++, Matlab, PyTorch, Tensorflow, etc.
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.

**Desirable:**

1. Mathematical/analytical background, in areas related to computer vision and image analysis.
2. Experience with OpenCV and other computer vision packages.
3. Background in developing software on both Windows and Linux.
4. Demonstrated GPU/Parallel Computing experience with C and C++.
5. Experience implementing mobile applications.
6. Experience in developing embedded deep learning applications.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* 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.
* The successful candidate may be required to undertake a pre-employment medical examination prior to commencement.
* 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/).

## **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. We expect our employees to demonstrate behaviours aligned to our values of:

• People First

• Further Together

• Making it Real

• 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/)!

**About ICV Group:**

Find out more about the [Imaging and Computer Vision Research Group](https://research.csiro.au/icv/).