# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Research Scientist Imaging and Computer Vision |
| Job Reference: | 62286 |
| 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: | 70% |
| Percentage of Client Focus - External: | 30% |
| Reports to the: | Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries  | Lars Petersson, Lars.Petersson@data61.csiro.auPlease do not email your application directly to Lars Petersson. Applications received via this method will not be considered by the selection panel |
| Contact Details For Applying | Call 1300 984 220 or email careers.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:

The role of Research Scientist Staff 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.

We are seeking to appoint a highly motivated Research Scientist to undertake computer vision research. The successful candidate will contribute to multiple projects undertaken by the CSIRO and in collaboration with other academic and commercial partners. These projects will include the development and deployment of novel algorithms and tools in 3D scene and objects modelling, as well as semantic scene understanding. The successful candidate will join the high-performing Imaging and Computer vision Group at the CSIRO’s Data61, joining 600 other data science scientists building innovative solutions for Australia.

To be successful in this role you will be enthusiastic about making a hands-on contribution to solving the research challenges found in multiple projects involving bionic vision, autonomous vehicle, or object detection using advanced machine learning methodology, especially deep learning.

CSIRO staff are professional scientists with no teaching duty. We strive on innovation and work closely with all the Universities, supervising and hosting many graduate and post-graduate students. CSIRO offers unique opportunity to mesh within the Australian innovation ecosystem and staff are exposed to deep technology start-ups and innovative commercial companies. We encourage and support entrepreneurship. This is a great opportunity for the successful candidate to work with other innovative researchers in a leading government organisation which is engaged in world class scientific research projects, and offers excellent career development and professional support. CSIRO is strongly committed to Diversity and offers Flexible Working Arrangements. The successful candidate will have a unique opportunity to translate their research into practice with impact on both Australian and international programmes.

## Duties and Key Result Areas:

* Develop innovative concepts, theories, tools and techniques related to the analysis of video 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;
* Carry out innovative, impactful research of strategic importance to CSIRO;
* Produce high quality scientific and technical outputs including journal articles, conference papers and presentations, patents and technical reports;
* Represent CSIRO at leading national and international conferences and forums;
* Contribute to the development of innovative concepts and ideas for further 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.

## 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: 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.**
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.

## Selection Criteria:

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

1. A doctorate in Computer Vision or a related discipline area, plus at least 3 years of relevant post doctorate research experience.
2. Demonstrated ability to investigate issues of complex and ill-defined problems and develop appropriate responses by adapting/creating and testing alternative solutions.
3. Demonstrated experience in 3D computer vision such as reconstruction, Visual Localization and Mapping, RGB-D, semantic vision with reasoning about the 3D world, or understanding visual scenes over time such as optical flow.
4. Demonstrable evidence of well-developed written and verbal communication skills, for example, publications in academic environments such as scientific journals/conference proceedings, experience presenting and demonstrating at conferences, industry exhibitions, internal training seminars.
5. Proven ability to work independently and as part of a team to prototype research ideas and develop them into demonstration and/or proof of concept systems. In addition, a demonstrated ability to interact with external/internal collaborators and stakeholders to solve their problems by creating and adapting research methods;
6. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## Desirable Criteria:

1. **A strong mathematical/analytical** background, in areas related to computer vision.
2. **Demonstrated GPU/Parallel Computing experience.**
3. **Demonstrated experience using deep Convolutional Neural Networks.**
4. **Interest and experience in entrepreneurship and bringing technology to market**
5. Evidence of advanced programming skills and software design in languages relevant for computer vision research (e.g. C/C++, Python, MATLAB).

## Special Requirements:

N/A

## About CSIRO:

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

Find out more about the CSIRO [Data61](https://www.data61.csiro.au/)