# Position Details

## Research Scientist/Engineer- CSOF5

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| Job Title | Research Scientist in Natural Language Processing and Information Retrieval  |
| Job Reference | 75121 |
| Tenure | Indefinite (Full-time) |
| Salary Range | AU $100,710 – AU $108,985 per annum (pro-rata for part-time)plus up to 15.4% superannuation |
| Location(s) | Sydney, NSW |
| Relocation Assistance | Will be provided  |
| Position reports to the | The job title for the line manager of this position |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Stephen Wan via email at stephen.wan@data61.csiro.au |

### 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.

The Language and Social Computing (LASC) team is looking for a research scientist/engineer (CSOF5) to join their team of natural language processing (NLP) researchers and engineers. As part of this role, you will be developing state-of-the-art AI technology based on the latest NLP techniques to help the team in different projects.

This applied research position will focus on Natural Language Processing (NLP), Information Retrieval (IR) and Machine Learning (ML). The successful candidate will be situated within the Language and Social Computing (LASC) team.

The team works on a diverse range of language technology application areas, such as information extraction, knowledge graph construction, information retrieval, dialogue and neural text generation.

The successful candidate will work on NLP problems, ultimately having an impact through real-world applications as well as through publication. The proposed role will focus on the delivery of solutions to industry-related projects, aligned with the team’s strategic research in developing a knowledge discovery and text analytics platform.

### Duties and Key Result Areas

* Research and development of natural language processing (NLP), information retrieval (IR) and machine learning (ML) methods.
* Develop state-of-the-art and novel algorithms in NLP and IR in research areas of interest such as information extraction, knowledge graph algorithms, or neural text generation and editing.
* Conduct ML/NLP/IR experiments.
* Prepare data sets for use with ML methods.
* Document results through scientific publication.
* Develop prototypes that can be utilised in deliverables to potential clients.
* Collaborate on team NLP projects and assist with development of CSIRO NLP platform technology.
* Work on client-facing projects, performing applied research on NLP, IR and ML.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A Masters or PhD (or an equivalent combination of qualifications and research experience) in a relevant field such as Natural Language Processing (NLP) or Information Retrieval (IR).
2. Hands on experience using deep-learning methods (such as current neural network approaches for NLP) and tools (such as Tensorflow/PyTorch) on textual data.
3. Hands on experience using Python for NLP and/or IR applications.
4. Experience in software engineering best-practice for research software.
5. A track record of publishing in NLP and/or IR in prominent conferences and journals, for example, ACL or SIGIR.
6. Knowledge of one or more of the following areas: neural text generation and sequence-to-sequence methods; sequence labelling and information extraction methods (such as named entity recognition, relationship extraction) using state-of-the-art machine learning-based approaches; and NLP and graph processing.

**Desirable:**

1. Developed prototypes for NLP and IR applications in specialised domains, with demonstrated experience in utilising domain-specific methodology and resources, such as domain-specific ontologies.
2. Knowledge of machine learning methods that capture semantic-relatedness for use in NLP and IR research.

## **Required 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.

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.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [CSIRO Data61](https://www.data61.csiro.au/) 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