# Position Description

## Research Scientist/Engineer – CSOF6

The following information is for applicants

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| Advertised Job Title**:** | Senior Research Scientist – Software Engineer |
| Job Reference: | 59518 |
| Location | Herston, QLD |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Classification**:** | CSOF6 |
| Salary Range: | AU $111,663 to AU $130,848 plus up to 15.4% superannuation |
| Applications Are Open To: | Australian Citizens Only  Australian/New Zealand Citizens and Australian Permanent Residents Only   * All Candidates |
| Percentage of Client Focus - Internal: | 50% |
| Percentage of Client Focus - External: | 50% |
| Reports to the: | Research Team Leader |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Dr James Doecke, James.Doecke@csiro.au. Please do not email your application directly to Dr. Doecke. Applications received via this method will not be considered |
| Contact Details For Applying | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online with both your CV and cover letter 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:

Neurodegenerative diseases such as Alzheimer’s are associated with early signs of amyloid-β plaque, Tau depositions and patterns of brain perfusion changes during the disease evolution. Top researchers in Australia have just been awarded a major NHMRC grant to set up a major clinical database for dementia. The new study, which will be Australia wide and will enrol ~4,000 participants, have data from imaging, biomarkers, neuropsychological testing and lifestyle, will run over five years, and will be an Australia wide repository for dementia research (Australian Dementia Network, ADNeT).

Research Scientist/Software Engineer – The role will primarily be focussed upon setting up and maintaining the database that will house all of the data that is collected by the study. It will involve developing IT solutions to meet the customer need, and will contribute to multiple other projects undertaken by the CSIRO in collaboration with academic partners from the QIMR Berghofer and the Florey Institute of Neuroscience. To support this research we are seeking to appoint a highly motivated professional to join the team, with a focus on:

1. Development of systems to handle large and complex data sets.
2. Development tools to streamline integration of data from multiple sources.
3. Quality control of data to enable accurate reporting to collaborators.
4. Standardized quantitative clinical reporting from the multiple different data sources

The successful applicant will be expected to interact and be highly involved in both the clinical and technical aspects of the ongoing dementia projects. To be successful in this role, you will be enthusiastic about making a hands-on contribution to solving the research challenges that arise in medical image processing research.

The position forms part of the Australian e-Health Research Centre (AeHRC) Biostatistics Team – currently comprising seven staff, as part of the Biomedical Informatics Group e-Health Program within CSIRO Health and Biosecurity. The role requires close collaboration with several project leaders and external collaborators.

## 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.
* Assist in building CSIRO’s research reputation for integrated and multi-disciplinary science through networking, presentation at conferences, social media, scientific publications, and outreach initiatives (mailing list, website).
* Develop high quality software to specifications using JAVA, C++ language, python, spring and web frameworks, and scripts for different platforms (including Linux- and Cloud-based architectures).
* Be part of a dynamic team within CSIRO and external partners developing new biomarkers for dementia and driving innovation from the bench top to the clinic.
* To assist in the development of new business models and commercialisation strategies to facilitate translation of precision medicine technologies to the market.
* Grow and maintain scientific citizenship, and collaborations with international and local partners.
* Supervise and mentor junior researchers and students.
* Communicate effectively and respectfully in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, diversity initiatives and Zero Harm goals.
* Other duties as directed.

## 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: Identifies critical stakeholders and influences them via an influential third party, for example through an established network, to gain support for sometimes contentious proposals/ideas.**
3. **Resource Management/Leadership: Sets up and maintains effective and efficient work teams and manages performance and resources, to achieve objectives. Chooses appropriate management strategies and communication styles to maintain high levels of motivation and productivity. Gives feedback for development purposes and provides support and direction for improvement.**
4. **Judgement and Problem Solving:** Anticipates and manages problems in ambiguous situations. Develops and selects an appropriate course of action and provides for contingencies. Evaluates, interprets and integrates complex bodies of information and draws logical conclusions, synthesises proposals and defends options with reasoned arguments.
5. **Independence: Assesses the risk and opportunity of identified strategies, options and actions. Overcomes problems and setbacks in achieving goals. Invariably includes consideration of value-added future impact on bottom line when determining the optimal and efficient use of resources.**
6. **Adaptability:** Demonstrates flexibility in thinking and adapts to, and manages, the increasing rate of organisational change by adjusting strategies, goal and priorities.

## Selection Criteria:

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

***Pre-Requisites:***

A Bachelor’s degree and significant research experience in a relevant discipline area, such as software engineering, medical imaging (MRI/PET), medical image processing and machine learning.

***Essential Criteria:***

1. Demonstrated competency in developing large scale databases using appropriate programming languages.
2. Demonstrated competence and experience in novel research problem solving and application of knowledge, as evidenced by publications and research experience.
3. Demonstrated experience of advanced programming skills (e.g., Python, C++) and software design (API design architectures) and development processes/environments (including Make, CMake, GIT)
4. 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.
5. A record of science innovation and creativity, plus the ability and willingness to incorporate novel ideas and approaches into scientific investigations.
6. Demonstrated experience in project management, with the ability to work with software engineers making important decisions to move projects forward.

**Desirable Criteria:**

1. ​Strong programming experience in Python and C++ and familiar with Linux and cloud-based programming.
2. Knowledge of clinical areas related to Alzheimer’s disease and other forms of neurodegeneration.
3. PhD in the relevant discipline area
4. Relevant experience working with large sets of data

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Find out more about the CSIRO [Australian e-Health Research Centre (AeHRC)](https://aehrc.com) and [Probing Biosystems Future Science Platform](https://research.csiro.au/biosystems)