# Position Details

## Research Projects- CSOF4/5

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| The following information is for applicants | |
| Advertised Job Title | Solutions Architect (Machine Learning) |
| Job Reference | 74425 |
| Tenure | Specified Term of 3 years |
| Salary Range | CSOF4 AU$85,361 to AU$96,573 pa (pro-rata for part-time) + up to 15.4% superannuation  CSOF5 AU$100,710 to AU$108,985 pa (pro-rata for part-time) + up to 15.4% superannuation  \*NB: This position is offered across two levels, the appointment level will be determined by the qualifications, skills and relevant experience of the successful candidate |
| Location(s) | Sydney, NSW (various locations across Sydney available as work base). Other major cities may also be considered. |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian and New Zealand Citizens & Australian Permanent Residents |
| Position reports to the | Team Leader, Transformational Bioinformatics |
| Client Focus – Internal | 30% |
| Client Focus – External | 70% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Denis Bauer via email at denis.bauer@csiro.au or phone +61 2 9325 3174 |
| 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. |

### Role Overview

The role of Research Projects staff in CSIRO is to collaborate in scientific and technological activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental, observational or technology development work, and in carrying out the more practical aspects of the work. At senior levels, Research Projects staff may be involved in providing consulting services, science management and/or industry liaison.

The Solutions Architect (Machine Learning) role will be part of the Australian e-Health research centre (AEHRC), one of the largest digital health innovation facilities in Australasia. Covering the full spectrum from basic science to mobile technologies and digital healthcare services that are applied in clinical practice, the AEHRC is a world-wide unique trailblazer of advanced digital solutions and innovative science.

The position will work with scientists from the high-performing Transformational Bioinformatics Team to develop novel digital services that join genomics and medical information to empower clinicians. Specifically, the role will be leading the technical development of the VariantSpark platform, as well as clinical pathology applications. Envisioned as a point-of-care solution, the technology needs to build on the latest in cloud services and cloud computing technology to deliver speed and accuracy on unprecedented data volumes. You will use your demonstrated knowledge in cloud-based distributed or high-performance computing from multiple vendors (e.g. EMR, HDInsight, Dataproc) as well as machine learning skills (SVM, Random Forest) to help us bring advanced IT solutions to human health applications.

### Duties and Key Result Areas

* In collaboration with scientists, design and implement innovative cloud architecture to carry out impactful research and cater for the challenges in the health and life science domain (fast turn-around-time and large volumes of data).
* Implement ML solutions to biological research questions; Explore novel ML methodological approaches to research questions.
* Be knowledgeable about cloud services across multiple vendors (specifically AWS, Azure, GCP).
* Prepare appropriate documentation through repositories (e.g. bitbucket), project boards (e.g. trello), online communities (e.g. gist) and contribute to reports, scientific papers and blog-posts.
* 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, regionally dispersed research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

**For appointment at the higher salary level (CSOF5), duties will also include:**

* Develop novel ML algorithms, tailored for genomic problems.
* Stay on top of newly released cloud services across multiple vendors (specifically AWS, Azure, GCP) and take ownership in applying them effectively to the scientific applications developed by the team.
* Identify market-gaps and lead development of tailored solutions to commercial impact, and be involved in grant applications.
* Drive collaborations with stakeholders and end-users and manage communication.
* Prepare scientific papers and present at conferences, blog posts and youTube videos.
* Manage junior team members.

## **Required Competencies**

**CSOF4**

* **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.

**CSOF5**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other team 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:** 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.
* **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 bachelor’s degree (or will shortly satisfy the requirements of a bachelor’s degree) or equivalent relevant work experience in a relevant discipline area, such as Information Technology, Bioinformatics, Electrical Engineering, Data Science.
2. Evidence of experience with cloud-based distributed or high-performance computing (e.g. EMR, HDInsight, Dataproc) as well as more than one language relevant for cloud services (e.g. Python, NodeJS, Scala, BASH).
3. Proven impact from developing web services on more than one cloud vendor (e.g. AWS, GCP, Azure).
4. Experience and passion for designing and implementing machine learning solutions (SVM, RF, DeepLearning) and deep knowledge of statistics.
5. Excellent communication skills, both written and oral, including the ability to anticipate the interests and knowledge level of an audience and present information and feedback accordingly.
6. The ability to work effectively as part of a multi-disciplinary, regionally dispersed science team, plus the flexibility to adapt to research workflows.
7. A record of technological innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into prototypes.
8. A history of professional and respectful behaviours and attitudes in a collaborative environment.

**For appointment at the higher salary level (CSOF5), essential criteria will also include:**

1. Experience innovating ML or statistical algorithms.
2. Experience working with external stakeholders and clients in a commercial environment, extensive knowledge of industry standards and identifying market gaps in order to innovate new solutions.
3. Experience leading successful projects involving multiple team-members with diverse skill-sets.
4. Experience communicating your work through multiple mediums (publications, conferences, YouTube, Twitter etc).

## **Desirable**

1. Experience working on genomics solutions specifically population genomics approaches.
2. Experience with server-less or Function-as-a-Service (FaaS) architecture.
3. Experience with clinical standards and ontology (HL7, HPO, Snomed, FHIR).
4. Experience with Australian and international privacy and data protection standards.

Special 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.
* 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/)

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* 1. People First
  2. Further Together
  3. Making it Real
  4. Trusted

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