# Position Details

## Technical Services- CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Data Analytics and Visualisation Specialist |
| Job Reference | 79101 |
| Tenure | Indefinite or Specified Term of \_\_\_ months  Full-time or Part-time \_\_\_hours/ftn |
| Salary Range | AU$102,724 to AU$111,165 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Melbourne / Sydney / Canberra / Adelaide / Perth / Brisbane |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian Citizens Only |
| Position reports to the | IMT Scientific Computing - Data Analytics and Visualisation Manager |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Mr Justin Bakervia email: [Justin.Baker@csiro.au](mailto:Justin.Baker@csiro.au)  *Please do not email your application directly to Mr Baker.   Applications received via this method may not be considered by the selection panel.* |
| 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 Technical Staff in CSIRO is to provide support for scientific research in a diverse range of laboratory and field situations across a range of different research projects. This support consists of the application of accepted technical practices and the development of new practices. The work is usually carried out as a member of a centralised service.

CSIRO information management and technology (IMT) provides a range of IT services in support of the organisation. This includes access to enterprise-wide hardware and software tools, IT security, records management and library services.

The Scientific Computing Program (SC) is a significant part of IMT, comprising of approximately 90 technical specialists, split across two groups – SC Platforms and SC Services. SC is focused on delivering access to CSIRO’s computing and data facilities, as well as the associated computational and information management expertise, for all science and research carried out within CSIRO.

The SC Platforms group manages over 30PB of research data at a compounded annual growth rate of ~75%, and a proportionate computational and network fabric including High Performance Computing clusters and data stores, internal research cloud services and a highly versatile and robust corporate hosting platform.

The SC Services group offers expertise and capabilities in areas such as:

* Data Visualisation – visualisation and visual analysis of large and complex datasets.
* Data Analytics – including the use of statistical methods, machine learning and deep learning techniques.
* Computational techniques – such as scientific modelling, algorithmic development and software performance, scalability and parallelisation.
* Software Engineering – user requirements, agile software development, testing and validation.
* Cloud – use of cloud services and platforms in computational and data intensive projects including considerations of security and information assurance.
* Data handling - improving the management of valuable scientific and research data sets through data handling, discovery, use, and reuse.
* Sustainability - assistance with a project’s computational and data management needs to maximise reusability, publication and reproducibility.
* Workflow tools – construction/implementation of applications and user interfaces in defined workflow managements systems, providing mechanisms for data capture and computational provenance, as well as software reuse and portability.

This role will provide scientific data analytics and visualisation expertise to members of CSIRO’s research community and has two main components.

1. Providing research groups with expertise and support to address their data analytics and visualisation needs. This includes development of software, workflows, converting and remapping data, and facilitating efficient use of a range of resources including CSIRO’s high-performance visualisation and computing systems.
2. Providing expert guidance on third party visualisation applications, including their recommendation, selection, training, demonstration and use across a range of scientific disciplines.

### Duties and Key Result Areas:

* Undertaking data analysis and subsequent visualisation to better understand complex scientific datasets.
* Creating interactive environments for data exploration.
* Developing scientific animations based on computational or simulated data.
* Making dynamic visualisation content available via a web interface.
* Performing complex data pre-processing for analysis including data cleaning and extraction, format conversion and data blending.
* Applying statistical and signal processing techniques to extract or validate data.
* Liaise with clients to determine their needs and take personal responsibility for their satisfaction, correcting problems promptly and in a constructive manner
* Under limited direction design or develop techniques, systems or processes requiring high levels of initiative, ingenuity and skill, and appropriate communication of research or service results.
* Working with unique or unusual features and complexity which require original design and techniques, some of which may be outside a single discipline.
* 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 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:** 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. Relevant tertiary qualification or equivalent relevant work experience in computer science, mathematics or equivalent.
2. At least 5 years’ experience in the interrogation and interpretation of scientific and research data sets through various means including data analytics and visualisation.
3. Demonstrated experience in:
   * Advanced handling and management of scientific or engineering data.
   * Data cleaning/processing and numerical/statistical analysis using programming languages such as Python, R, JavaScript and C++.
   * Interactive web-based presentation of complex data to facilitate understanding.
   * Extracting meaning from data using 3rd party visualisation software and/or through the development of bespoke data visualisation tools using frameworks and libraries such as Three.js, react, node.js, D3.js, OpenGL/WebGL, Python/R libraries.
   * The use and/or application of geospatial data or geospatial tools.

## **Desirable:**

1. 3D visualisation and modelling of scientific data using tools such as Three.js, VTK, Blender, Unreal Engine, Unity, Drishti and Houdini.
2. Experience in developing immersive virtual reality and/or augmented reality data visualisation systems
3. Familiarity with cloud-based visualisation systems and/or remote visualisation.
4. Experience with relational database systems.

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 required to obtain and maintain Baseline security clearance and may be required to obtain clearance at Negative Vetting Level 1.

## **About CSIRO:**

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