# Position Details

## Software Engineer – CSOF5/6

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| The following information is for applicants | |
| Advertised Job Title | Geospatial Software Engineer |
| Job Reference |  |
| Tenure | Indefinite full time |
| Salary Range | CSOF5/6 salary band (will depend on experience) |
| Location(s) | Melbourne (Clayton) |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian Citizens and Australian Permanent Residents Only |
| Position reports to the | Team Leader (James Hilton) |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact:  James Hilton, [James.Hilton@data61.csiro.au](mailto:James.Hilton@data61.csiro.au);  Mahesh Prakash, [Mahesh.Prakash@data61.csiro.au](mailto:Mahesh.Prakash@data61.csiro.au) |

### Role Overview

CSIRO’s Data61 is at the forefront of developing a range of geospatially focussed modelling and analytics products in the Natural Hazards and Climate Risk domains. These products are powered by an underlying analytics engine that has an emphasis on rapid processing of large amounts of geospatial spatio-temporal data. As we work on increasingly challenging problems the need to further enhance the geospatial analytics engine as well as refine and consolidate its architecture has become important. This role has the primary purpose of maintaining and enhancing this core capability so that it can support further development of existing national and global scale products such as [Spark](https://research.csiro.au/spark) and [INDRA](https://research.csiro.au/indra/) along with emerging similarly architected products in the [flood](https://research.csiro.au/swift) and [evacuation](https://research.csiro.au/evacuation) domains. The role will also play a key contribution to enhancing the backend architecture of products using the core analytics engine including the development of relevant API’s.

### Duties and Key Result Areas:

* Respect and enthusiasm for a multi-disciplinary and diverse team environment.
* Technical leadership in maintaining and enhancing the core geospatial analytics engine underpinning Data61’s Hazards and Climate Risk capabilities
* Contribution to the development of backend API’s including relevant architecture for products underpinned by the geospatial analytics engine
* Participation in and contribution to external and internal stakeholder engagement Nationally and Globally.
* Contribution to commercial projects in Data61 in the Hazard and Climate Risk domain as directed by the Team, Group and wider Data61.
* 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:** 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.

## **Selection Criteria**

#### Essential

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

1. A bachelor’s degree or equivalent in computer science/software engineering with at least 3 years’ experience in working as a software engineer in a commercial setting
2. Demonstrable experience in the python scripting language especially in libraries such as numpy, scipy, xarray, gdal, rasterio and dask
3. Demonstrable experience in developing and maintaining REST based interfaces using Flask, Django
4. Demonstrable experience in writing OpenCL scripts
5. Demonstrable understanding and implementation of modern software development practices including version control, coding standards and software testing
6. Demonstrable experience with programming in C/C++
7. Strong written and verbal communication skills
8. Demonstrable experience in working in a collegiate, diverse and multi-disciplinary team environment.

**Desirable:**

1. Experience with CI/CD pipelines
2. Experience with Celery and async processing
3. Maintaining and developing the existing codebase and tools for incorporation and dissemination of climate projections and other relevant geospatial datasets
4. Experience in analysing and processing climate and other geospatial datasets to meet stakeholders needs
5. Experience in dealing with large and complex datasets, preferably climate datasets, geospatial datasets using tools such as CDO, NCO and GDAL
6. Experience in GPU based programming and parallel processing.

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 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.

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

Data61 is Australia’s digital powerhouse, formed by the recent integration of NICTA and CSIRO’s Digital Productivity business unit. We bring a multidisciplinary approach with design thinking, creativity, and behavioural economics to solve complex business problems, digital transformation and early stage commercialisation of data-centric solutions.

Data61 is a CSIRO entity, Australia’s preeminent scientific organisation. Being part of CSIRO gives us access to deep domain expertise across all of the industry sectors most likely to be disrupted over next 5-20 years.

Data61 focuses on every aspect of data research and development, from data capture [via sensor technology and robotics] to data consumption; communications and networking; infrastructure; hardware and software; cybersecurity; data statistics, modelling and analytics; decision sciences; behavioural economics and cognitive sciences—across every major industry sector.

**Find out more** – visit our [website](http://www.data61.csiro.au/)