# Position Details

## Research Projects- CSOF4

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| The following information is for applicants |
| Advertised Job Title | Microseismic Geophysicist/Data Analyst |
| Job Reference | 99962 |
| Tenure and work schedule | Specified Term of 18 months Full-time |
| Salary Range | AU$96,811 – AU$109,527 per annum (pro-rata for part-time) plus up to 15.4% superannuation |
| Location(s) and office arrangements | Brisbane (Pullenvale), QLD |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates *(visa sponsorship may be provided to the successful candidate, if required)* |
| Position reports to the | Team Leader, Distributed Mine Sensing Team |
| Client Focus – Internal | 40% |
| Client Focus – External | 60% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Matt van de Werken, Team Leader – Distributed Mine Sensing Team, via email at matt.vandewerken@csiro.au  |
| Support and workplace adjustments | We offer a range of reasonable supports and workplace adjustments. Please let us know via email Piumi.Desilva@csiro.au (Piumi De Silva – Talent Acquisition Partner) if we can help you to equitably participate in our recruitment process or the role itself. |
| How to apply | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**We encourage you to reach out if you require any support or experience difficulties when applying – please email careers.online@csiro.au |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

**About CSIRO**

As Australia's national science agency, CSIRO is solving the greatest challenges through innovative science and technology. Many of our iconic innovations were once considered impossible until someone, just like you, joined us and took on the challenge.

As one of the world’s largest multidisciplinary mission-driven research organisations, we are focused on the issues that matter the most: for our quality of life, for the economy and for our environment. We believe diverse teams are more effective and deliver more innovative outcomes. When we all focus on the big things that really matter, and work in partnership with our communities and [Indigenous Australia](https://www.csiro.au/research/indigenous-science), Australian science and technology can solve seemingly impossible problems and create new value for all Australians. Visit [CSIRO.au](https://www.csiro.au/) for more information.

### 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.

As an integral part of the Distributed Mine Sensing Team in the Sustainable Mining Technologies research program at CSIRO, the successful candidate will contribute to ongoing research into microseismic and other geophysical sensing technologies aimed at enhancing mine safety, operational efficiency, and geotechnical risk management. This role focuses on the application and advancement of distributed fibre optic sensing (DFOS) methods – such as distributed acoustic sensing (DAS), distributed temperature sensing (DTS), and distributed strain sensing (DSS) – in both laboratory and field environments.

Working collaboratively within a multidisciplinary team, the candidate will engage in the development of experimental methods, data acquisition systems, and software tools, including the use of machine learning to automate signal interpretation. They will contribute to projects that span fundamental research and real-world deployments, providing innovative solutions for complex geotechnical challenges in underground and surface mining operations. The position also involves close engagement with internal stakeholders and industry partners, supporting the translation of research outcomes into practical applications that align with CSIRO’s mission to create a safer, more sustainable resources sector.

### Duties and Key Result Areas

* Contribute to innovative geotechnical and geophysical research, focusing on the development and application of distributed fibre optic sensing (DFOS) technologies such as DAS, DTS, and DSS for mine safety and infrastructure monitoring.
* Undertake detailed analysis of DAS data to assess mining-induced fracturing response in contexts such as block caving and longwall mining, along with the deployment and operation of advanced field monitoring systems that support geotechnical risk evaluation.
* Design, install, and maintain geophysical networks – such as microseismic arrays and fibre-optic sensing systems – to detect seismic activity and better understand rock mass behaviour and failure mechanisms.
* Support improved risk management and operational decision-making in mining and civil infrastructure projects.
* Undertake software development, including developing, adapting, and maintaining tools for data acquisition, processing, and interpretation.
* Apply machine learning techniques to automate the analysis of large-scale DFOS datasets, and utilise existing knowledge and experience in developing algorithms and signal processing workflows suited to novel sensing applications.
* Conduct laboratory experiments using distributed temperature and strain sensing (DTSS) systems to assess the structural behaviour of assets such as tailings dams. In field settings, analyse data collected from mechanical and seismic sensors during drilling operations to characterise geomechanical properties in real time.
* Maintain laboratory and field equipment upkeep, managing consumables, and providing guidance or training on the safe and effective use of shared resources.
* Devise innovative approaches to experimental designs and problem-solve when existing methodologies are inadequate.
* Contribute to project planning, including scheduling, experimental design, data collection, and analysis.
* Work closely with colleagues and clients, to help define research challenges, evaluate alternative solutions, and implement technologies that meet practical and strategic needs.
* Build and maintain strong stakeholder relationships, and take responsibility for understanding client requirements, providing regular updates, and ensuring project satisfaction.
* Communicate technical outcomes through high-quality documentation, reports, and research publications, as well as by presenting results to clients, collaborators, and the broader scientific community.
* Work collaboratively as part of a multi-disciplinary, regionally dispersed research team to carry out tasks in support of CSIRO’s scientific objectives, and 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.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy and diversity initiatives.
* Additional duties may be assigned to support broader team or organisational goals as required.

## **Selection Criteria**

#### Essential

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

1. Bachelor of Science degree with major in Physics, Geophysics or Mathematics.
2. Theoretical and applied knowledge of distributed fibre optic sensing measurement systems (DAS, DTS and DSS).
3. Experience in designing, installing, and maintaining geophysical networks (such as microseismic arrays and fibre-optic sensing systems), and analysing the network data.
4. At least 12 months’ industry experience writing code for advanced data analysis in programming languages such as Python, R, Matlab, or C/C++/C#.
5. Experience with Machine Learning algorithms, including training models on interpreting geophysical data.
6. Competent ability in using MS Office products (Word, PowerPoint, Excel).
7. A current Australian Driver’s licence (or the ability & willingness to obtain it).
8. A current Standard 11 Surface Mining induction certificate (or the ability & willingness to obtain it)*.*
9. Willingness and ability to travel to remote mine sites for field deployments for up to several weeks at a time.

## **Desirable**

1. Experience in mining or undertaking mine site field work.
2. An understanding of mining terminology, systems and activities.
3. Experience with use of distributed fibre optic sensing systems.
4. Experience with use of machine learning methods for seismic signal processing.
5. Intermediate or advanced Linux or other computer systems administration skills.
6. Current First Aid Certificate.

## **Not sure if you meet all the criteria?**

While it is CSIRO policy that the successful candidate must meet all the essential criteria, there are many ways to demonstrate this. Don’t let the list discourage you. If you are unsure about applying, please reach out to the contact on page 1 of this document so we can discuss the role further.

## **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.

## **Setting you up for success**

We understand that not everyone works in the same way and sometimes people may require reasonable support and adjustments to perform at their best. Whether related to the recruitment process and or the role itself, this may include options such as providing different methods of communication, flexible hours or physical adjustments to work methods. If you feel comfortable, we encourage you to share any support and adjustments you may need to carry out the inherent requirements of the role. Please let us know via email Piumi.Desilva@csiro.au (Piumi De Silva – Talent Acquisition Partner) if we can help you to equitably participate in our recruitment process or the role itself.

## **Life at CSIRO and flexible working arrangements**

We [work flexibly at CSIRO](https://www.csiro.au/en/careers/life-at-csiro/Flexible-work), offering a range of options for how, when and where you work.  We can discuss flexible work arrangements with you during the recruitment process. CSIRO also offers a range of leave entitlements, [benefits](https://www.csiro.au/en/careers/life-at-csiro/Benefits) and [career development](https://www.csiro.au/en/careers/life-at-csiro/Career-development) opportunities. To learn more, visit [Careers at CSIRO](https://www.csiro.au/en/careers).

We celebrate the uniqueness of our workforce and are committed to creating [diverse and inclusive teams](https://www.csiro.au/en/careers/life-at-csiro/Diversity-inclusion-belonging) where everyone feels they belong. CSIRO is an equal employment opportunity organisation dedicated to recruiting people based on merit, and reflecting the diversity of the community we serve. We recognise true diversity encompasses all ages, nationalities, abilities, cultures, genders, sexualities, faiths, levels of education, diversity of thought and many more aspects of identity. By empowering diverse teams, our community is reflected in the solutions we create.

## **CSIRO values**

CSIRO is a values-based organisation committed to values-based leadership.

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| **Value** | **Descriptor** | **Behaviour** |
| **People first** | Our priority is the safety and wellbeing of our people. We believe in, and respect, the power of diverse perspectives. We seek out and learn from our differences.  | * Respectful
* Caring
* Inclusive
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| **Further together** | We achieve more together than we ever could alone. We listen and collaborate, in teams, across disciplines, across boundaries. We embrace ambiguity and use discussion and persistence to generate unique solutions to complex problems. | * Accountable
* Authentic
* Courageous
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| **Making it real** | We do science with real impact. We thrive when taking on the big challenges facing the world. We take educated risks and defy convention. We celebrate successes and failures and leverage them to learn as we strive to be the force for positive change. | * Partnering
* Cooperative
* Humble
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| **Trusted** | We’re driven by purpose but remain objective. We fight misinformation with facts. We earn trust everywhere through everything we do. We trust each other and we hold each other accountable. Together our actions drive Australia’s trust in CSIRO. | * Curious
* Adaptive
* Entrepreneurial
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## **Child safety**

CSIRO is committed to the safety and wellbeing of all children and young people involved in our activities and programs. View our [Child Safe Policy](https://www.csiro.au/en/about/policies/child-safe-policy).

Special Requirements

Appointment to this role is subject to provision of a pre-employment background check and may be subject to other security/medical/character clearance requirements.

* The successful candidate will undertake a pre-employment background check. Please note that individuals 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/>