# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist – Digital Crops |
| Job Reference | 99528 |
| Tenure and work schedule | Specified Term between 1 October 2025 to 30 June 2028Full-time (preferred)*We will explore options for part-time, job-share and flexible work arrangements based on needs of the role and individual circumstances.* |
| Salary Range | AU$114,219 – AU$123,605 per annum (pro-rata for part-time) plus up to 15.4% superannuation |
| Location(s) and office arrangements | Canberra (Black Mountain) ACT **preferred**; Narrabri NSW*Other CSIRO sites may be considered, if required, based on needs of the role and individual circumstances**Flexible work options available* |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * Australian/New Zealand Citizens
* Australian Permanent Residents
* Australian Temporary Residents with a valid working visa for the full duration of the specified term (until 30 June 2028)
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| Position reports to the | Team Leader, Digital Crops |
| Client Focus – Internal | 10% |
| Client Focus – External | 90% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Vivien Rolland (he/him), Team Leader – Digital Crops, via email at vivien.rolland@csiro.au or phone +61 2 6218 3510 |
| 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**If you 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 Scientist staff is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. They may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. The Research Scientist will also have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Digital Crops Research Scientist, in this role, will lead a multidisciplinary research work package as part of a 4-year project funded by Cotton Breeding Australia aiming to develop innovative computer-vision solutions to improve the development of new Cotton varieties. In this role, the Research Scientist will integrate expertise in plant phenotyping, engineering, image collection, computer vision, machine learning and recent advances in deep learning to help redesign crop breeding systems. The project will lead the development of a high throughput digital phenotyping solution applied to plant establishment and growth dynamics in Australia’s cotton breeding program, reducing the dependency on manual approaches and their associated limitations. This will be used for the selection of superior varieties via traditional breeding methods, as well as to generate information that can be fed into genomic prediction models to enable the prediction of these traits by DNA.

The Digital Crops Research Scientist will ideally be located in Canberra (ACT) with the Project Leader, as well as with Plant Phenomics, Computer Vision and Plant Physiology experts. They will be closely collaborating with Cotton experts based in Narrabri (NSW), where the CSIRO Cotton breeding program resides and where field experiments will take place. Therefore, the Digital Crops Research Scientist will be required to travel regularly to Narrabri for multi-day field trips to collect data from field experiments.

### Duties and Key Result Areas

* Identify and develop methods to acquire imagery (including LiDAR and hyperspectral) using a range of sensors and platforms from cotton field trials suitable for scoring target traits.
* Lead the development of an imagery-based platform for cotton establishment and growth dynamics quantification.
* Develop and implement practical data science methods to score target traits in cotton.
* Test and validate developed methods and techniques.
* Under the supervision of more senior researchers, assist in the planning and preparation of research proposals, and carry out research investigations, requiring originality, creativity and innovation.
* Assist the project leader in reporting to external client by providing well-crafted progress summaries and other relevant information as required.
* Select the most profitable line of attack upon a problem, prepare detailed design proposals and experimental protocols.
* Draw on professional expertise, knowledge of other disciplines and research experience to recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Liaise with clients to determine their needs and take personal responsibility for client satisfaction.
* Present results in a meaningful format, prepare reports for clients and/or write scientific papers for publication.
* Undertake experimental and/or observational research activities (including fieldwork) and supervise/train others to ensure experiments are established in accordance with research design.
* Provide supervision and coaching to students and technical staff.
* Present research by publication at academic and industry meetings.
* Record, manage, and analyse data/information using relevant domain data science techniques.
* Address problems promptly and in a constructive manner.
* 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 and diversity initiatives.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A PhD and demonstrated relevant postdoctoral experience in the fields of applied computer vision, phenomics or data science.
2. Ability to balance scientific innovation with delivery of tangible and practical AI outputs that can be adopted in a commercial breeding context.
3. Demonstrated ability to coordinate and conduct field work using effective communication skills (please note that this position requires regular travel to field sites).
4. Demonstrated publication history of authorship on scientific papers and ability to lead peer-reviewed publications combining innovation in 3D computer vision and domain application.
5. Excellent ability to communicate complex artificial intelligence opportunities and novel developments with a potential to create innovation in the application domain to a range of non-specialist stakeholders, including industry experts and end users.
6. Demonstrated ability and experience in operating UAVs to collect field data.
7. Experience using a range of sensors (i.e. RGB, multispectral, hyperspectral, LiDAR).
8. Strong capabilities in using programming languages such as Python, Pytorch and other relevant AI/CV libraries, with experience developing new Deep Learning model architectures.
9. Demonstrated flexibility in efficiently managing competing tasks and priorities, to facilitate complex experiments across multiple sites, and to cooperate with other members of the project team to ensure HSE standards are maintained, and project goals are achieved.

## **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 responses 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 change.

## **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.
* The successful candidate should be able and willing to regularly travel to field sites and remote locations as requirements arise.