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# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist in Digital Livestock Science |
| Job Reference | 95461 |
| Tenure | Specified Term of 3 years, Full-time |
| Salary Range | AU$105k - AU$114k per annum (pro-rata for part-time)plus up to 15.4% superannuation |
| Location(s) | Armidale, NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens and Australian Permanent Residents |
| Position reports to the | Team Leader, Digital Livestock |
| Client Focus – Internal | 70% |
| Client Focus – External | 30% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Sabine Schmoelzl via email at sabine.schmoelzl@csiro.au or phone +61 2 6776 1331 |
| 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 or call 1300 984 220. |

**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).

**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).

### Role Overview

The role of the Digital Livestock Scientist is to conduct and lead innovative research using digital livestock science approaches to address industry specific problems, aligned with CSIRO’s strategies. In the Livestock and Aquaculture program, we use a range of digital technologies (motion sensing, geolocation, video data, computer vision) in conjunction with commercial technologies (eg walk-over-weighing) and environmental sensing infrastructure (eg soil moisture) to support livestock research centred on the areas of sustainable production, animal nutrition, animal health and welfare, and reproductive efficiency.

The Digital livestock scientist will play a key role in widening our portfolio of digital livestock approaches, securing productive and responsible livestock farming in a changing environment. The research focus of the Digital Livestock Scientist could include data analytics, artificial intelligence, sensor technologies, computer vision, multi-modal data processing, evaluating precision livestock management, or other foci relevant to the digital livestock space. A key feature of the research will be taking a trans-disciplinary approach to arrive at industry-relevant research outcomes.

As part of the Digital Livestock team, this role will contribute to a key capability engaging with the whole of the Agriculture and Food Business Unit. The successful candidate will develop, manage, and support existing and emerging digital technologies, and implement new features and contribute new data sets. The role offers the opportunity to work with and expand on existing projects and initiatives in the digital livestock space, as well as initiate and secure funding for new research activities. The Digital Livestock team is embedded in the Livestock and Aquaculture program and offers further opportunities to engage with emerging technologies within aquaculture. The role will be suitable for animal scientists from a range of backgrounds with a strong interest and well-developed skills in coding or informatics/data sciences, or alternatively for data scientists with a well-established, and proven, strong understanding and interest in animal production systems.

### Duties and Key Result Areas

* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing, and further research, with a focus on boundary spanning, trans-disciplinary approaches.
* Work closely with animal scientists to develop impact-focussed digital technologies.
* Develop data flows to augment the annotation, integration, and analysis of diverse data, in collaboration with Data61 data scientists.
* Apply advanced data science workflows for integration of multi-modal data streams.
* Utilise data science strategies to analyse and evaluate data. Manage data curation, storage, and data sharing in accordance with best practise guidelines.
* Develop and apply standard operating procedures and safe working instructions.
* Undertake regular reviews of relevant literature and patents.
* 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.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals and for presentation at national and international conferences. Communicate research results to clients and the scientific community through oral and written reports and prepare documentation for patent applications (where relevant).
* Work effectively as part of a multi-disciplinary, regionally dispersed research team, to undertake independent scientific investigations and carry out associated tasks under the guidance of more senior Research Scientists/Engineers.
* Under the guidance of senior leaders, work collaboratively and honestly with internal and external colleagues, clients and partners to help define and satisfy objectives for small to medium research projects.
* Assist in leading research projects, including the negotiation of resource requirements.
* Take responsibility for smaller research projects or elements of larger projects within and/or across Business Units.
* Provide leadership, supervision and on-the-job training to technical staff and students to ensure experiments are established in accordance with the research design and are completed within the agreed timeframes and budget.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## **Selection Criteria**

#### Essential

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

1. A PhD (or an equivalent combination of qualifications and research experience) in a relevant animal science or data science field.
2. Demonstrated understanding of animal production and/or livestock farming systems.
3. Broad understanding of agri-food systems and an interest in deepening knowledge of current global and national issues.
4. Demonstrated experience in the development of digital workflows, including data annotation.
5. Demonstrated experience in data science and statistical analysis, coding and/or related analytical methods, and expert usage of statistical software packages, such as R.
6. Demonstrated ability to undertake original, creative, and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
7. Demonstrated ability to communicate scientific content clearly and effectively.
8. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.
9. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications.

## **Desirable**

1. Expertise in ML/AI.
2. Advanced expertise in suitable programming languages, eg Phython, C++, R, MatLab or others.
3. Demonstrated expertise in video data analysis, including computer vision.
4. Expertise in remote sensing technologies.
5. Design of multi-modal data analytic workflows.
6. Demonstrated ability to secure support for new research projects.
7. Understanding of livestock production in an Australian farming systems context.
8. Strong networks within the Australian livestock research community.

## **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.

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.

Include if relevant:

* 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.

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and [Agriculture - CSIRO](https://www.csiro.au/en/work-with-us/industries/agriculture) for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted