# Research Projects – CSOF3

Role summary for potential applicants

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| Advertised Job Title**:** | Embedded Software Engineer |
| Reference Number**:** | 36641 |
| Classification**:** | CSOF3 |
| Salary Range: | AU $59,636 to AU $75,900 plus up to 15.4% superannuation |
| Location**:** | Pullenvale, QLD |
| Tenure: | Specified Term of 2 years and 2 months |
| Relocation assistance**:** | * Will be provided to the successful candidate if required. |
| Applications are open to: | Australian Citizens Only  Australian Citizens and Permanent Residents Only   * All Candidates * *For Specified Term positions, we will accept applications from Temporary Residents with working rights for the length of the term, who do not require sponsorship.* |
| Functional Area**:** | * Research Projects |
| Number of Direct Reports: | * 0 |
| Reports to the: | * Research Team Leader |

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| **Role Overview:** |
| The role of Research Projects staff in CSIRO is to collaborate in scientific activities with other research staff usually by assisting with detailed planning, undertaking or assisting with experimental and observational work, and in carrying out the more practical aspects of the work.  We are seeking a motivated individual for an Embedded Software Engineering position in the Pervasive Computing Systems Research Team. The position will fill a critical role in a highly motivated research team with over a decade experience in developing low power wireless sensor network technologies for real-time tracking and measurement of location, behaviour, and environmental context of animals, people, or mobile assets. The team conducts world leading research on networked embedded algorithms, wireless communication protocols, and in-situ machine learning techniques and applies the research across real-world application domains, including agriculture, animal and asset tracking, and mining.  The main responsibilities of the Engineer will be to develop user interfaces for networked embedded devices, including 1) web interfaces on a cloud server, 2) smart device (phone, tablet) applications that directly communicate and interface a network of embedded devices, and 3) web interfaces hosted at an edge gateway node that can be directly access by users through Bluetooth or Wi-Fi. The role involves design and implementation of the user interfaces as well as their testing and deployment in laboratory and field trials, implementation of statistical and analytical software libraries for data processing on the server backend from spatially distributed sensor systems. The Engineer will also assist with the specification and implementation of scalable, low power wireless networks. |

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| **Duties and Key Result Areas:** |
| * Design, development, testing, and deployment of user interfaces (web, smart phone app) for networked embedded systems. * Design, development, and testing of database schemes and queries to support visualization tools available through user interfaces. * Design and conduct user trials to test and evaluate the developed algorithms in target environments. * Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation. * Work as part of a multi-disciplinary, often regionally dispersed research team, to carry out tasks under limited direction in support of scientific research. * Work collaboratively with colleagues within your team, the business unit and across CSIRO, to reach objectives. * Provide instruction on activities pertaining to the immediate work area and responsibilities, as required. * Adapt and/or develop original experimental methods/equipment/software/concepts/ ideas in support of existing and further research. * 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. |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed*  ***Pre-Requisites:***   1. **Education/Qualifications:** Relevant Bachelors/Masters Degree &/or equivalent experience in Software Engineering or other relevant Information Technologies Field 2. **Communication:** Ability to communicate in a fluent and courteous manner, both orally and in writing, offering factual information supported by proven data, and providing appropriate feedback when required. 3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment. 4. **Adaptability:** The ability to effectively manage a number of competing priorities simultaneously, and carry out non-routine tasks under general direction. 5. **Problem Solving:** Proven ability to investigate routine problems by identifying and considering the implications of a range of available alternative solutions**.**   ***Essential Criteria:***   1. Proficiency in design and development of web-based applications for a range of hardware devices, such as (virtual) servers, ARM-class embedded devices (such as raspberry Pi), and low-power embedded devices (such as TI SensorTag). The experience should include both front-end and server backend development, database design. 2. Proficiency in development of applications for mainstream smart phone operating systems (Android, iOS). 3. Experience with design and implementation of efficient and scalable applications in the AWS cloud (or similar infrastructure). 4. The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, and carry out tasks under general direction from Scientific Researchers. 5. The ability & willingness to contribute novel ideas and approaches in support of scientific investigations.   **Desirable Criteria:**   1. Experience with embedded systems, including familiarity with embedded C, embedded operating systems, python, and network protocols. 2. Experience with field-testing of IT systems, including user studies, field experiments, analysis of field trial data, and in-situ debugging.   **CSIRO is a values based organisation. You will need to demonstrate behaviours aligned to our values of:**   * Integrity of Excellent Science * Trust & Respect * Creative Spirit * Delivering on Commitments * Health, Safety & Sustainability   Data61 is a values based organisation. Our leaders will be expected to demonstrate the following values:  **Hierarchy**: Country, Company, Team, Individual  **Openness**: Open debate, collaboration, full commitment  **Learning**: Calculated risks, institutionalise learning, fast cadence  **Impact**: Tackle hard problems, create the future, focus on outcomes  **Stewardship**: Lead, make each function and co. stronger over time  ***Other special requirements:***  To be eligible for this position you must be willing and able **to undertake specific non-negotiable activities or tasks, i.e. field work with extended time away, high frequency of trips, remoteness/accessibility of locations, in challenging environments, such as rain forests, or coral reefs at sea.** |

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| **Other Information:** |
| **How to Apply**  Please apply for this position online at [www.csiro.au/careers](http://www.csiro.au/careers). You may be asked to provide additional information (online) relevant to the selection criteria. If so, then responding will enhance your application so please take the time to provide relevant succinct answers. Applicants who do not provide the information when requested may not be considered.  If you experience difficulties applying online call 1300 984 220 and someone will be able to assist you. Outside business hours please email: [careers.online@csiro.au](mailto:careers.online@csiro.au).  **Referees**: If you do not already have the names and contact details of two previous supervisors or academic/ professional referees included in your resume/CV please add these before uploading your CV.  **Contact:** If after reading the selection documentation you require further information please contact:  Dr Brano Kusyvia email: [Brano.Kusy@csiro.au](mailto:Brano.Kusy@csiro.au) or phone: 07 3327 4023  Please do not email your application directly to Dr Kusy. Applications received via this method will not be considered.  **About CSIRO**  Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.  Find out more! [www.csiro.au](http://www.csiro.au).  **Data61** is the largest data innovation group in Australia. Bringing together our Digital Productivity team and National ICT Australia (NICTA), we are unrivalled in our intellectual capital and our network with the global technology marketplace.  Find out more! <http://www.csiro.au/en/Research/D61> |