# CSIRO Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | CSIRO Postdoctoral Fellowship – IoE Security and Trust |
| Reference Number**:** | 46663 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $83,487 to AU $91,451 plus up to 15.4% superannuation |
| Location**:** | Marsfield, Sydney, NSW |
| Tenure: | Specified Term of 3 years |
| 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 |
| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 100% |
| % Client Focus - External: | 0 |
| Reports to the: | Group Leader – Distributed Systems Security |
| Number of Direct Reports: | 0 |

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| **Role Overview:** |
| **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers, who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.  Postdoctoral Fellows are appointed for up to three years and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.  The Postdoctoral Fellow is expected to lead the Data Trustworthiness in the Internet of Everything (IoE) project, and undertake novel and world class research, leading to reputed international publications.  The practical project output is a demonstration system embodying intellectual property designed to protect IoE systems in domains of national importance such as agriculture, health and environment. With the number of internet-connected devices set to almost double by 2020 with the emergence of the IoE, the opportunity for attacks is growing rapidly. The postdoc’s work will develop technology to diminish this threat.  Under the guidance of the Distributed Security Systems Group leader, within the Software and Computation Science Program at CSIRO Data61, the Postdoctoral Fellow will undertake research and actively collaborate with well-known Australian (UNSW) and International (Purdue University) academics in the field.  Data61 envisions a vibrant and globally competitive Australian cyber security industry with greater resilience to cyber threats in business, to enhance confidence in the digital economy by bringing together exceptional people from research and industry. Data61 is building a network with industries and academic communities both nationally and internationally. The PDF will have an opportunity to collaborate with other Data61 partners as part of the project*.* |

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| **Duties and Key Result Areas:** |
| * Under the direction of senior research scientists, carry out innovative, impactful research of strategic importance to Cybersecurity that will, where possible, lead to novel and important scientific outcomes. * Development of new provenance techniques for data verification in the Internet of Everything (IoE) and Implementation of the developed techniques on the Web of Things (WoT) platform. * Identify the opportunities for novel public key cryptographic techniques tailored for data security and privacy in the IoE. * Undertake regular reviews of relevant literature and patents. * Produce high quality scientific and/or engineering papers suitable for publication in top tier conferences such as IEEE S&P, ACM CCS, NDSS, Usenix Security, Crypto and Eurocrypt, or similar, and for client reports and granting of patents. * Prepare appropriate conference papers and present those at conferences as agreed with your supervisor. * Contribute to the development of innovative concepts and ideas for further research. * Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans. * Work collaboratively with colleagues within your team, the business unit and across CSIRO. * Communicate 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, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals. * Undertake an appropriate training and development program developed by CSIRO.   Other duties as directed  ***CSIRO’s postdoctoral training program***is developed between the Postdoctoral Fellow and a CSIRO scientist. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:   * Discipline-specific techniques and protocols * Professional growth * Project management * Communication and influencing skills * Working and collaborating with others   <http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed*  ***Pre-requisites***   * **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as computer science, electrical engineering, information technology or communication engineering.   ***Please note:*** *To be eligible for this role you must have* ***no more than 3 years*** *of relevant postdoctoral experience.*   * **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.** * **Publications: A record of publications in quality, peer reviewed journals and top tier conferences such as IEEE S&P, ACM CCS, NDSS, Usenix Security, Crypto and Eurocrypt or similar.** * **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.   ***Essential Criteria:***   1. **Proven ability to conduct high quality research, development and implementation in security and trust.** 2. **The ability to understand the state-of-the art security and trust solutions and apply them in real-life application scenarios.** 3. **Experience in developing trust and security solutions in distributed systems such as Internet of Things and sensor networks.** 4. **The ability to work effectively as part of a multi-disciplinary, regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.** 5. A record of science innovation and creativity, plus the ability & willingness to incorporate novel ideas and approaches into scientific investigations.   **Desirable Criteria:**   1. Experience in applied cryptography 2. Experience in developing distributed trust solutions (e.g., data provenance, blockchain, etc.)   ***CSIRO Values:***  As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to Excellent science, Inclusion, trust & respect, Health, safety & environment and Deliver on commitments.  In your application and at interview you will need to demonstrate alignment with these behaviours.  ***Data61 Values:***  In Data61, 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   **Eligibility:**  To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4.1 ($80,833). Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.  **Other special requirements:**  Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- <http://www.ielts.org/default.aspx> |

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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: [csiro-careers@csiro.au](mailto:csiro-careers@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:  Surya Nepalvia email: [Surya.Nepal@data61.csiro.au](mailto:Surya.Nepal@data61.csiro.au) or phone: +61 2 9372 4256.  Please do not email your application directly to Dr Nepal. 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).  **CSIRO Data61** In today’s data-focused world, there’s no doubt that numbers count. [**Data61**](http://www.data61.csiro.au/) are the largest data innovation group in Australia, a connector that brings together technology innovators, businesses and universities to transform Australian industry and to help solve our greatest challenges. A CSIRO business, we are creating our data-driven future.  **What CSIRO offers you**  You will be joining our small, dynamic research group in Sydney which is part of the Software and Computation Systems Program at Data61. We have a strong passion for doing world class science and making a difference by applying it to real world problems across CSIRO business areas and external clients. We have strong connections to other research teams and groups in CSIRO, top Australian research universities (UNSW, Sydney University, UTS), and internationally well recognised researchers in security and privacy. Working in our team will allow you to leverage these connections to widen and strengthen your own professional network. We offer a flexible working conditions to suit your needs, and support travel to international conferences. In this project, you are working closely with academics from UNSW, Sydney and Purdue University, USA.  Working in CSIRO Data61 offers opportunities for you to step up and assume responsibility and leadership in research and community activities. |