Position Details

Research Projects - CSOF5

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| The following information is for applicants | |
| Advertised Job Title | Software Engineer for Blockchain Projects |
| Job Reference | 64329 |
| Tenure | Indefinite  Full-time |
| Salary Range | AU $98,735 to AU $106,848 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Eveleigh, NSW |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | Australian/New Zealand Citizens and Australian Permanent Residents Only |
| Position reports to the | Senior Engineer |
| Client Focus – Internal | 50% |
| Client Focus – External | 50% |
| Number of Direct Reports | 0 |
| Enquire about this job | Shiping Chen, [Shiping.Chen@data61.csiro.au](mailto:Shiping.Chen@data61.csiro.au) |
| 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](mailto:careers.online@csiro.au) or call 1300 984 220. |

**Role Overview**

The role of Software Engineering staff in CSIRO is to support innovative research and scientific achievements, by bringing innovation out of the lab and into the real world, through product development and platform engineering.   
  
Blockchain is an emerging technology for building next generation P2P decentralised applications (DApps). Its unique capabilities lower the bar of required trust for organisations and people to conduct collaborations easily and efficiently, which can lead to innovations and new business models. In Data61, Architecture and Analytic Platform (AAP) team has been working on a number of blockchain R&D projects in inventing new blockchain technology and adopting blockchain for various applications needs. Some of these projects are:

* **Smart Money**: making money programmable to enforce government welfare polices
* **ePytho**: digitalizing Phytosanitary certificates for transparently sharing across countries using Blockchain
* **Supply Chain Integrity**: improving trust and transparency for supply chain collaboration
* **Blockchain Data Migration:** providing methods and tools to help transfer both data and its value between Blockchains.
* **Micro-Credential:** developing a trust platform to automatically verify and share skill certification and credibility using blockchain.
* **Data Sharing based on Web 3:** researching a new way to share data over next generation web architecture and protocols
* **Decentralized Energy trading and management:** using blockchain/smart contract to enable peer-2-peer trading within and cross micro-grids and provide an incentive for maintenance.
* **Aboriginal arts data collection and style learning:** To collect images of aboriginal arts (painting/drawings), build a classifier for different styles and a generator to mimic different styles with given customer input, develop a marketing mechanism for reward original style creators based on classification results. The whole process uses block-chain or the other immutable database to track provenance.

Some of the above these projects are funded and/or collaborated by/with our external partners, such as CBA, DFAT, Block8 etc. The full-stack software engineer will learn & use Blockchain technology to build tools and P2P-based decentralised applications. Extend your software engineering skills by exploring Blockchain technology. The solutions developed are expected to be adopted by our industry partners and/or commercialized as open sources or licensable IP. **This position offers an excellent opportunity to work on high impact projects**.

**Duties and Key Result Areas:**

* Develop software requirements based on communication with clients and researchers.
* Develop architecture and APIs for system integration and automation.
* Design and develop Blockchain-based DApps, including mobile apps.
* Work with researchers and software team members to design, develop and deliver quality software.
* Write technical and user documentations.
* Communicate effectively and respectfully in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work effectively as part of a multi-disciplinary research team to undertake independent scientific investigations and carry out associated tasks under the guidance of stakeholders and senior team members.
* Other duties as directed.

**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:** 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 changes.

**Selection Criteria**

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

***Essential Criteria:***

1. Bachelor’s Degree or Higher in relevant discipline
2. Proficiency in designing and implementing system architecture, integration and automation.
   1. Developing and using APIs (e.g. REST) and/or web services.
   2. Experience with containers (e.g. VMs, Docker) for deploying applications.
   3. Using multi-threading, distributed systems and large-scale real-time data.
3. Strong software engineering and documentation skills with experience in preparing requirements specifications, design documents, implementing, deploying and testing to real environment.
   1. Multiple programming languages, such as Go, C#, Javascript, C/C++, Java (SE and EE), Python, SQL, ASP .Net MVC.
   2. Using RDBMS such as MySQL, PostgreSQL, SQLite.
   3. Front end development, especially using node.js, VueJS, Angular 4+, ReactJS or equivalent.
4. Experience in Cybersecurity, BPM and machine learning algorithms.
   1. Security concepts and the corresponding technologies, e.g., Public/Private keys, encryptions/decryption, digital signature/hashing, etc.
   2. Business process management.
   3. Machine learning, neural network and uses their available libraries.

**Desirable Criteria:**

1. Experience working with Blockchain, such as Bitcoin, Ethereum and HyperLedger
2. Experience with testing, continuous integration and continuous delivery
3. Experience developing in an agile team environment
4. Experience with cloud solutions/providers e.g. AWS, Azure.
5. Experience with Git in a team environment
6. Ability to work effectively as part of a multi-disciplinary, regionally dispersed development team, and carry out tasks under general direction from scientific researchers
7. Demonstrated interest in research, collaboration and publications.
8. Experience in developing visualisation.

**Special Requirements**

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people 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/

**About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!