

# JOB DESCRIPTION

<b>Vacancy reference:</b>	SRF30411
<b>Post Title:</b>	Research Assistant (AI Software Engineering & Data Science)
<b>Grade:</b>	Grade 6
<b>School/Department:</b>	School of Mathematical Physical and Computational Sciences/ /Computer Science
<b>Reports to:</b>	Line manager
<b>Responsible for:</b>	Other project team members whose contributions this person may supervise from time to time

## Purpose

This is a Research Assistant role focused on AI software engineering and Data Science with some knowledge of distributed ledger technologies (Blockchain). The appointee will work within a large scale collaborative European project Critical-Chain and contribute to and develop the research work on the project Critical-Chains <https://research.reading.ac.uk/critical-chains/> within the Department of Computer Science, University of Reading. The central objectives of our research and innovation agenda concern i) data flows integrity audit of the distributed Blockchain network, and, ii) Financial Transaction flows modelling, mining and anomaly detection

## Main duties and responsibilities

### Research

- Work as required in the designated RTD areas on the specified research projects as supervised by the Principal Investigator (PI) and carry out relevant research including pro-active task management and coordination of such tasks as appropriate in a collaborative research environment within a highly teamwork-oriented approach to project management.
- Regularly initiate progress reporting and discussion of any issues arising, with the PI and with counterparts in Partner organisations for task coordination as required to complete project deliverables and their documentation effectively and within agreed deadlines as scheduled.
- Engage in and contribute to technical communication and dissemination of the team's research and innovation results and documentation for publication of scientific and technical papers in leading academic journals and other relevant media, conferences, exhibitions etc.
- Ensure adherence to methodologically-guided and ethically-responsive research and Innovation system development under the supervision of the PI to support specified project objectives.
- Contribute to the development of the projects as a self-contained theme of research and innovation work or as part of a broader programme.
- Carry out independent research and supervise specific aspects of the work of other research assistants as directed by the PI.
- Carry-out the monthly updating of the project website and liaise with the Project Dissemination Manager and the PI in ensuring that new content is updated and the website overall is well-presented with the open-access results of the project in accordance with the prior approved by the PI.
- Collaborate with colleagues within the University in the development of original research relevant to the broader theme of research being conducted by the team and its application in specific domains of interest.
- Use initiative and creativity to synthesise, analyse and interpret research data.

## **Enterprise and outreach**

- Adopt a socio-technically reflective user-centred design approach for solutions responsive to the specific needs of the stakeholders
- Perform system conformance testing and trialling as part of a team.
- Support outreach activities to engage industry partners and clients external to the University.
- Attend and help organise the relevant project workshop, seminars, conferences, exhibitions and other events as required

## **Leadership and management**

- May supervise the work of other support staff.
- Participate in School promotion and undertake project-related administration such as organising regular project or client meetings, and, contributing to the compilation of the periodic technical and management reports.
- Participate in project teams and steering groups at a Departmental or School level.
- Make presentations or seminars as required e.g. the Consortia meetings.
- Attend all work-package-specific and Steering Committee project management meetings and contribute to the compilation of the minutes.
- Provide accurate time logging record for such RTD activities.

## **Supervision received**

The appointee will report to Professor Atta Badii who will provide detailed guidance on work to be undertaken within the project. However, the researcher is also expected to work independently and with initiative.

## **Supervision given**

To student research assistants.

## **Contact**

There will be frequent contact with the European project partners working on the project.

## **Terms and conditions**

Full-time (35 hours per week). This is fixed term contract to commence as soon as possible and will end on 30th June 2022.

This document outlines the duties required for the time being of the post to indicate the level of responsibility. It is not a comprehensive or exhaustive list and the line manager may vary duties from time to time which do not change the general character of the job or the level of responsibility entailed.

## **Date assessed:**

25 May 2020

# PERSON SPECIFICATION

Job Title	School/Department
<b>Research Assistant</b> <b>(AI Software Engineering &amp; Data Science)</b>	<b>SMPCS / Computer Science</b>

Criteria	Essential	• Desirable
<b>Skills Required</b>	<ul style="list-style-type: none"> <li>• Excellent time management</li> <li>• Communication and inter-personal skills</li> <li>• Research and learning skills</li> <li>• Technical report writing.</li> <li>• Project management skills and deliverables management</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation skills</li> <li>• public speaking</li> <li>• Meeting management skills</li> </ul>
<b>Attainment</b>	<ul style="list-style-type: none"> <li>• Education to PhD or MSc ( Computer Science) with R&amp;D experience or exceptionally BSc (Honours) in Computer Science - 1st Class only- with around 2-years of work experience involving software engineering in particular agile software system development involving Machine Learning, Data Mining and distributed Ledger technologies</li> </ul>	
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>• Excellent Programming skills in C++/C#/ Java/Python</li> <li>• Data Modelling preferably including Graph Data Modelling</li> <li>• Ontology and Metadata Engineering</li> <li>• Machine Learning</li> <li>• Data (Stream) Mining</li> <li>• Cyber-Physical Service-oriented Architectures – web services design and IOT Integration</li> <li>• Special requirements are a working Knowledge and Practical Skills for:</li> <li>• Strong Software Engineering</li> <li>• Data Mining</li> <li>• Machine Learning</li> <li>• Blockchain Layers and Functions</li> </ul>	<ul style="list-style-type: none"> <li>• Cryptography</li> <li>• Distributed ledger system particularly smart contracting layer</li> <li>• Standards such as XML, SOAP, .NET etc.</li> <li>• Scripting Languages such as JavaScript</li> <li>• Semantic Data Fusion</li> <li>• Secure IOT –enabled X-as-a-service Integration e.g. using LinkSmart</li> <li>• Natural Language Processing)</li> <li>• Reinforcement Learning</li> <li>• Case Based Reasoning</li> </ul>
<b>Relevant Experience</b>	<ul style="list-style-type: none"> <li>• Experience of working on software engineering projects carrying out independent ICT research projects against specific objectives and deadlines</li> </ul>	
<b>Disposition</b>	<ul style="list-style-type: none"> <li>• Pro-active team worker</li> <li>• Ability to work on own initiative, flexible to work to the requirements of the</li> </ul>	

	projects, team-work oriented, professional conscientious attitude	
<b>Other</b>	<ul style="list-style-type: none"> <li>• Willingness to travel on research project meetings and conferences (Europe and USA) in the Future when appropriate to do so</li> </ul>	

<ul style="list-style-type: none"> <li>• Completed by: Atta Badii</li> </ul>	Date: 25 May 2020