

**Job Related Information**

This document includes information about the role for which you are applying and the information you will need to provide with your application.

1. **Role Details**

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| Vacancy reference | 15085 |
| Job title: | Research Software Engineer |
| Reports to: | Arosha K. Bandara, Professor of Software Engineering |
| Salary: | £32,548 - £38,833 |
| Terms and conditions: | Academic Related |
| Grade | 7 |
| Duration of post: | 36 months |
| Working hours: | Full Time |
| Location: | Walton Hall, Milton Keynes |
| Closing date: | 12 Noon on 17th September 2018 |
| Type of application form accepted: | Long |
| Number of referees required: | Three |
| Unit recruitment contact: | Rekha Ramesh |

1. **Summary of duties**

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| **Overall Purpose**  The position involves the development of software technology solutions and proof of concept prototypes that will support citizen-police collaborations.  The research will be carried out as part of the EPSRC-funded “Citizen Forensics” project, which is a 3-year programme of interdisciplinary research that will develop a socio-technical system for Citizen Forensics that will enrich and deepen collaboration between citizens and the police. This system will the exchange of data gathered using a variety of digital technologies, to support investigation of crimes and enhance public safety.  **The Project**  *Citizen Forensics* aims to reframe the challenges that underlie modern policing in a socio-technical world; a world instrumented with mobile and ubiquitous computing technologies, in which many citizens and communities live, work and play, but which must also manage threats to their wellbeing and their rights. The project aims to support a new engagement between authorities (such as the police) and communities of citizens in order to better investigate (and in the long term reduce) potential or actual threats to citizen security, safety, and privacy.  A key challenge of the project is to investigate how adaptive software architectures could support the contextual information flows required to deliver the community-police collaborations envisaged for Citizen Forensics, preserving key properties such as privacy and forensic-soundness. As part of this we plan to explore ways of representing domain knowledge such as policing regulations, forensic requirements for particular investigations and privacy requirements, that will enable runtime the runtime adaptation of the system.  This project focusses on the challenge of *using and interacting with personal data* in the context of policing by developing insights into how social identities and group behaviours affect the construction and use personal data as evidence. We will use these insights to create a socio-technical system for Citizen Forensics that configures dynamic collaborations between police, citizens and technology, moderated by privacy and forensic-soundness requirements.  The project brings together a multi-disciplinary research team, combining expertise in technology with an enhanced understanding of the psychology of how communities, the police and technologies work together, and the effect of this collaboration on the practice of policing and the lives of citizens. Further co-creation and refinement of research challenges is embedded into the research through engagement with partners in the Centre for Policing Research and Learning, as well as local government community safety teams.  **Main Duties**   * To design and implement software that supports citizen-police collaboration, integrating a variety of data sources that include IoT devices, social media feeds, etc. * To support the deployment of the technologies for the field trials * To support software development activity in related research projects. * Contributing to the research culture and activities of the Software Engineering and Design (SEAD) Group and School of Computing and Communications. * Joining a thriving inter-disciplinary research team at The Open University’s SEAD Group (<http://sead.open.ac.uk>), in collaboration with research colleagues in the OU’s School of Psychology, the OU’s Centre for Policing Research & Learning (<http://centre-for-policing.open.ac.uk>) and at University of Exeter (Prof. Mark Levine). There is a expectation that you will actively contribute to the strong profile of the group and its inter-disciplinary ethos through participation in the development and publication of research results   **All Staff are expected to:**   * Undertake any other duties which may reasonably be required * Take reasonable care of the Health and Safety of themselves and that of any other person  who may be affected by your acts or omissions at work * To demonstrate a strong commitment to the principles and practice of equality and diversity. |

1. **Person specification**

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| Requirements (E = Essential/ D = Desirable) | |
| Education, qualifications and training | |
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| **Knowledge, work and other relevant experience** | |
| **Essential:** | * Experience of building highly connected software systems * Demonstrable knowledge of programming development tools (revision control, debuggers, profilers) * Good communication, presentation and interpersonal skills. * An understanding of equal opportunities and diversity in the work place. |
| **Desirable:** | * Experience of building mission critical systems * Working knowledge of linux or other unix-like operating system * Experience of programming applications for social media platforms and IoT data platforms. * Experience of working with time series data * Experience of working in interdisciplinary teams, * Experience of using Python, PHP or Perl * Experience of Android development * Project management experience |
| **Personal abilities and qualities** | |
| **Essential:** | * Excellent communication and interpersonal skills * Excellent organisational skills * Ability to work independently |
| **Desirable:** | * Interest in digital forensics, privacy and security |

1. **Role specific requirements e.g. Shift working**

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**5. About the unit/department**

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| **The Open University**  The Open University’s mission is to be open to people, places, methods and ideas*.* We promote educational opportunity and social justice by providing high quality university education to all who wish to realise their ambitions and fulfil their potential. Through academic research, pedagogic innovation and collaborative partnership we seek to be a world leader in the design, content and delivery of open supported learning.  **Our Values**  In achieving our vision, we remain committed to, and are guided by, the enduring Open University values of inclusivity, innovation and responsiveness.  **Our Students**  Most courses are available to students throughout Europe and some are available worldwide directly from the OU. Many more courses are available through partnerships and accredited institutions. There are currently around 3,500 students in the Republic of Ireland, 9,000 students elsewhere in Europe, 7,500 outside the European Union and another 46,000 students on OU-validated programmes.   * 76% of directly-registered OU students work full or part-time during their studies; * 23% of OU UK undergraduates live in the 25% most deprived areas; * 31% of new OU undergraduates are under 25; * The OU is the largest provider of higher education for people with disabilities, educating 22,000 people with disabilities in 2015/16; * Of the University’s student population starting undergraduate study, over one third had one A level or lower qualification and 3 per cent had no formal qualifications; * Approximately 70 per cent of OU students are studying while in employment: thousands of people, who might not have been able to study because of work or family commitments, are able to study part-time with the OU.   **Our Faculties**  There are four academic faculties:   * Science, Technology, Engineering and Mathematics * Well-being, Education and Language Studies * Arts Social Science * Business and Law   **Faculty of Science, Technology, Engineering & Mathematics**  The Faculty of Science, Technology, Engineering and Mathematics (STEM) is comprised:   * School of Computing & Communications * School of Environment, Earth & Ecosystem Sciences * School of Engineering & Innovation * School of Life, Health & Chemical Sciences * School of Mathematics & Statistics * School of Physical Sciences * Knowledge Media Institute * Deanery including teams supporting Curriculum, Research and Enterprise, Laboratory Infrastructure and Faculty Administration   **“We aspire to be world leaders in inclusive, innovative and high impact STEM teaching and research, equipping learners, employers and society with the capabilities to meet tomorrow’s challenges”**    The Faculty of STEM consists of 700 staff and 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total.  The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.  We are proud of our distinctive values and capabilities underpinning our aspiration:  *We are inclusive:*   * We transform people’s lives, ensuring STEM education is openly accessible to many thousands of students from diverse backgrounds – our students express high satisfaction with their study experience * We engage the public in exciting citizen science and engineering, including through free open educational resources, multi-platform broadcasting, outreach to inspire the next generation and with programmes to encourage more women into STEM   *We are highly innovative:*   * We are at the forefront of innovative developments in teaching practical science and engineering at a distance, through simulated and remote access laboratories and practical experimentation * Our high quality teaching and curriculum are informed by world-leading research, strong links with professional bodies and communities of practitioners, as well as by scholarship focused on continuously improving our STEM pedagogy   *We deliver significant social and economic impact:*   * We provide STEM higher education at a scale and reach unsurpassed in the UK, with a sizeable international reach and further growth potential * We inject transferable STEM skills and knowledge direct into the workplace for immediate employee and employer benefit, as students combine study while working * The employability value of our courses is underpinned by accreditation from leading STEM Professional Bodies and Learned Societies, as well as partnerships and sponsorship with leading employers * Our high quality, applied and academically relevant teaching and research addresses real-world issues, delivering impact for industry and society, including addressing pressing STEM skill-shortages across the UK   **School of Computing & Communications**  The School of Computing and Communications has around 80 academic and research staff, and is home for a number of visiting researchers and full-time and part-time research students.  Our objectives are:   * Transforming students’ lives through innovative and dynamic teaching enriched by world-class research and scholarship. * Developing graduates with technical, analytical and creative skills who meet the highest expectations of employers and who can make a difference in their workplaces. * Leading and shaping the digital revolution through people-centred, inter-disciplinary, collaborative research and scholarship that transforms society. * Looking outwards to engage with individuals and external bodies, sharing our knowledge and developing mutually beneficial partnerships, so together we can create a more technically and socially aware digital society. * Being a vibrant, agile and inclusive academic community that promotes academic excellence in all areas of teaching, research and external engagement.   Our strong sense of collegiality and community continues to shape and direct the interdisciplinary approaches used throughout our work.  The School of Computing and Communications holds the Athena SWAN Bronze Award and is committed to transforming gender equality. One aspect of our success in this area is that the School has more female professors than male, which is unusual for the discipline.  We teach a comprehensive range of undergraduate and postgraduate qualifications. Our students are nearly all part-time and are studying at different rates. We have the equivalent of 4772 full-time students registered for our undergraduate BSc degree across the UK and Europe, mostly studying at home. We have also just launched a degree apprenticeship in Digital Technology Solutions, one of three apprenticeships forming a pilot across the University.  We pioneered an online Introduction to Cyber Security MOOC (<http://bit.ly/1pMMKhk>), hosted on Futurelearn, which has been studied by over 140,000 learners worldwide. We are currently developing a further six MOOCs in cyber security. We also have extensive Open Educational Resources hosted by OpenLearn, run a distance ‘boot camp’ in programming, and have a robotics lab funded by HEFCE which we are working to make accessible to students from their homes.  Our main research interests lie in the areas of security/privacy, software engineering, communication technology, human-computer interaction, ubiquitous computing, Computer Science education, technology enhanced learning, computational linguistics, the history of technology, and critical information studies.  We aim for, and achieve, international excellence in research and teaching, leading on many projects including smart cities development. The OU’s Computing research performed strongly in the Research Excellence Framework (REF 2014) assessment, with 77% of outputs rated world-leading or internationally-excellent (up from 70% in 2008), and an excellent research environment (100% rated world-leading or internationally-excellent).  The Software Engineering and Design (SEAD) group (<http://sead1.open.ac.uk>) is the largest research group in the School and consists of a team of multidisciplinary researchers with a shared goal of making software more *dependable*, *usable* and *useful* with a particular interest in security and privacy.  Group members have a track record of collaborative research in *human-centred* computing, which has translated into the development of techniques and tools that focus on a variety of stakeholders in the software development process, and the software artefacts these stakeholders design, build, and use. Current and recent large funded projects focus on secure software, healthcare and forensics. Current external funding is diverse and exceeds £7M with total funding in the last 7 years of over £15M. |

1. How to obtain more information about the role or application process

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| If you would like to discuss the particulars of this role before making an application please contact Prof Arosha K. Bandara on +44 (0)1908 653545 or email: [arosha.bandara@open.ac.uk](mailto:arosha.bandara@open.ac.uk). |
| If you have any questions regarding the application process please contact Rekha Ramesh on +44 (0)1908 659037 or email: [STEM-Recruitment@open.ac.uk](mailto:STEM-Recruitment@open.ac.uk). |

7. The application process and where to send completed applications

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| Your application should contain: | * Completed long application form * Covering letter detailing how your research experience and skills could contribute to the Citizen Forensics project * CV, including examples of software projects delivered |
| Please ensure that your application reaches the University by: | Noon on 17 September 2018 |
| E-mail your application to: | [STEM-Recruitment@open.ac.uk](mailto:STEM-Recruitment@open.ac.uk) |
| Or post it to Name/Job title: | Rekha Ramesh, Staffing Adviser |
| Department/Unit: | Deanery, Faculty of Science, Technology, Engineering & Mathematics |
| Address: | The Open University, Walton Hall, Milton Keynes, MK7 6AA |

8. Selection process and date of interview

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| The interview panel will be chaired by: | Prof Arosha K. Bandara, Professor of Software Engineering |
| The other members of the interview panel will be: | Prof Bashar Nuseibeh, Prof Blaine Price, Mr. Ciaran McCormick |
| The interviews will take place on: | To be confirmed |
| The selection process for this post will include | To be confirmed |

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|  | We will let you know as soon as possible after the closing date whether you have been shortlisted for interview. Further details on the selection process will also be sent to shortlisted candidates.  Applications received after the closing date will not be accepted. |