**Job Description: Senior Lecturer in Software Security – Enhanced Research Pathway**

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| **Faculty:** | Faculty of Science and Engineering |
| **Department/Subject:** | Department of Computer Science |
| **Salary:** | Grade 9: £45,585 to £54,395 per annum with USS benefits |
| **Hours of work:** | Full time, however applications for part time work or job share will be considered |
| **Number of Positions:** | 1 (either Lecturer or Senior Lecturer, depending on the profile of the successful candidate) |
| **Contract:** | This is a permanent position |
| **Location:** | This position will be based at the Bay Campus |

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| **Introduction** | To deliver its sustainable top 30 ambition Swansea University needs a workforce with the differentiated skills necessary to ensure that it can deliver excellence in research, teaching, learning, and the wider student experience, and to be a powerhouse for the regional economy and internationally.  Swansea University’s vision is to transform lives and futures by providing an outstanding academic environment with a balance of excellence between world-class teaching and research, driving impact that is enabled by effective regional and global collaborations. The Department of Computer Science in the Faculty of Science and Engineering is now seeking applications from ambitious and talented individuals to join our academic team.  The Computer Science Department at Swansea University is ranked highly for both teaching and research: The Guardian University Guide 2023 placed it 25th in the UK and 1st in Wales. In REF 2021 we are delighted that 90% of our research is world-leading and internationally excellent, and that we achieved 100% world-leading and internationally excellent ratings in impact, showing that as a department we are dedicated to embedding real-world impact in everything we do. The department is home to eight research groups: Artificial Intelligence; Cyber Security; Education, History and Philosophy; Human Computer Interaction; Intelligent Robotics; Railway Verification; Theoretical Computer Science; and Visual Computing. The Computer Science Department is ranked 126-150 among the world's top institutions in the 2023 Times Higher Education World University Rankings by Subject. |
| **The Role** | We would be delighted to hear from interested parties who are pioneering new techniques and addressing new problems in software security. For example, these might include techniques such as information flow analysis or fuzzing, topics such as automated threat detection with ML/AI or AI for defending systems, digital forensics, application areas such as IoT security or the security of ad-hoc-sensor networks (to name just a few established instances). In particular, we are interested in experimental approaches which provide empirical evidence of the security or resilience of the software under consideration, demonstrating that the software will not cause harm, is protected against attacks, and is capable to recover.  The Computer Science Department is committed to supporting and developing Cyber Security. Recently, we have recruited five leading researchers in the field, including a chair. The current group consists of experts from software engineering, formal methods, cryptology, human-computer interaction, AI and ML, monitoring, and techniques for privacy. It offers a vibrant research atmosphere, in which colleagues take a holistic view on Cyber Security. The Cyber Security group has a cyber security lab dedicated to the experimentation with devices and software. The National Cyber Security Centre UK (NCSC) recognises Swansea as an Academic Centre of Excellence (ACE) in Cyber Security Education (silver).  We are open to a variety of specialisms within the broad field of Cyber Security, especially those that resonate with or complement the research expertise in the Department. We are particularly seeking applications from candidates with expertise in applied/experimental aspects. The new position could expand the research profile or strengthen and deepen some of the existing techniques and domains. With this opening we are looking for someone who shares our vision to take our software security research to the next level and the postholder will be making a major contribution in expanding our academic staffing in this area.  The Department runs BSc, MSc, and PhD programmes in Computer Science, Software Engineering, and Digital Technology. These would offer the candidate an ideal opportunity to develop courses and projects in software security. Furthermore, we are home to an EPSRC Centre for Doctoral Training that addresses challenging questions relating to AI and big data including many related to security. The Department owns powerful computer equipment that allows one to run large experiments.  The Computer Science Department is based in the Computational Foundry – a £32.5M programme of work that has been part-funded by the European Regional Development Fund through the Welsh Government and Swansea University. The state-of-the-art building, opened in 2018, comprises 7,500m2 of purpose-built Computer Science facilities, and aims to make Swansea a beacon for Computer Science, attracting and retaining world class researchers, building up a talented future workforce who will innovate, challenge, and disrupt. It provides a dedicated set of labs and innovation spaces as well as teaching laboratories and research facilities and is also home to the £5M EPSRC Centre for Doctoral Training Centre in Enhancing Interactions and Collaborations with Data and Intelligence Driven Systems that is training the next generation of research and innovation leaders in human-centred approaches. The Department has longstanding major projects in engaging with business, education, and civic society: our Technocamps Unit and Institute of Coding is a driving force for educational reform in computing in Wales. The University History of Computer Collection is a museum, archive, and study centre for the history of computing and its social influence. The department housed one of the UK’s six RCUK funded Digital Economy Centres, CHERISH-DE, that has recently platformed a further University investment in transdisciplinary research via Wales’ first Advanced Studies Institute, MASI. Both the Computational Foundry and CHERISH-DE have played a significant role in making the case for the £1Bn Internet Coast City Deal that is seeing Southwest Wales become a vibrant testbed for next generation approaches to health and wellbeing, smart manufacturing, energy sustainability and digital economy services, all underpinned by computational innovations.  A tall building in a city  Description automatically generated A group of people in a room  Description automatically generated  Informal enquiries are welcome and should be directed to Professor Xianghua Xie, Head of Computer Science, [x.xie@swansea.ac.uk](mailto:x.xie@swansea.ac.uk) |
| **Academic Career Pathways** | The Academic Career Pathways (ACP) scheme is designed to ensure that academic strengths whether in research, teaching, the wider student experience, leadership or innovation and engagement, are all appropriately recognised, developed, valued, and rewarded. There are three enhanced academic strands: Enhanced Teaching and Scholarship; Enhanced Research; and Enhanced Innovation and Engagement.  For more information on Academic Career Pathways, please click [here](https://www.swansea.ac.uk/personnel/current-staff/academic-career-pathways/). These provide indicative performance levels for all academic staff which will be used throughout the recruitment process. Where there are numeric indicators these will be considered in light of the stage of career, hours of work and other commitments. This may be personal circumstances or work related activities outside of academia such as in industry or a clinical setting. You are very welcome to provide any relevant individual circumstances such as career breaks, any periods of leave or secondment or any other absences, which should be taken into account and how these have had an impact on your career development. |
| **Main Purpose of Post: Enhanced Research** | 1. Research Outputs and Activity: Develop a record of research outputs and their dissemination in quality publications or other media. 2. Research Projects and Grants: Secure resources to underpin research activity with responsibility for designing, planning and managing a sustained programme of research and of conducting original investigations within agreed timescales and budgets. 3. Esteem: Achieve recognition for contribution to the discipline through making a personal contribution on research developments. 4. Postgraduate Research Student Supervision and Development: Responsible for effective postgraduate research student supervision |
| **Management** | 1. Contributing to our Activities: Take part in formulating Faculty/Department or University decisions and contribute to activities beyond the immediate research, teaching or scholarship commitments. 2. Participating in Professional Activities: Engage with professional activities related to the discipline through networking at conferences or involvement in external groups. 3. Managing Self and Others: Support and enable the development of colleagues, students and/or yourself. |
| **Teaching and Scholarship** | 1. Teaching Delivery and Review: Deliver effective teaching, assessment and quality assurance of modules or other equivalent components of the taught portfolio. Review course content and materials, and develop, design and update materials in compliance with quality standards. 2. Teaching Innovation and Impact: Carry out teaching based on innovation which is up to date and informed by research or professional practice. 3. Advancing Practice: Responsible for advancing personal teaching practice. |
| **General Duties** | 1. Promote equality and diversity in working practices and maintain positive and collaborative working relationships. 2. Conduct the job role and all activities in accordance with safety, health and sustainability policies and management systems, in order to reduce risks and impacts arising from the work activity 3. Ensure that risk management is an integral part of any decision making process, by ensuring compliance with the University’s Risk Management Policy. 4. Any other duties as agreed by the Faculty / Directorate / Service Area. |

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| **Person Specification Criteria** | **Typically evidenced by:** |
| **Qualifications** | |
| 1. A PhD in a relevant subject area or a degree and relevant professional experience or qualification. | *PhD (or soon to be completed), indicating the research area in the application; chartered membership of professional body, etc.* |
| 1. Recognised teaching qualification that would lead to Fellowship of the Higher Education Academy (HEA) or a commitment to achieve this. | *If the applicant does not have a recognised teaching qualification then evidence is required of a commitment to work towards Fellowship of the Higher Education Academy (HEA) or equivalent.* |
| **Enhanced Research** | |
| 1. A record of research outputs and dissemination in quality publications or other media. | *Four internationally excellent outputs in the last five years.* |
| 1. Success in securing resources to underpin original research. | *The value of such awards should be at least £3000, averaged over the last 5 years, as a Principal or Co-Investigator.* |
| 1. Evidence of recognition for contributing to the discipline | *Evidence of peer recognition over the last 5 years.*  *Presenting contributions at conferences, workshops, seminar and other appropriate events. At least one presentation with a national or international reach on at least 3 occasions in 5 years.* |
| 1. Evidence of effective postgraduate research student supervision. | *Acting as first or second supervisor of at least 1 current Postgraduate Research student.* |
| **Core Teaching** | |
| 1. Evidence of or ability to undertake effective delivery of teaching, assessment and review of modules or other components of the taught portfolio. | *- a good teaching feedback and/or through improved progression or retention*  *- Acting as an effective tutor or student project supervisor with successful outcomes.*  *- a commitment to innovative teaching and CPD* |
| **Core Management** | |
| 1. Evidence of taking an active part in decisions and activities in an academic unit or institution, beyond own research or teaching commitments. | *Examples showing personal contribution and impact.* |
| ***Subject Specific*** | |
| 1. Excellent research in software security, in particular with an experimental take. | *- Application/CV.* |
| **Welsh Language** (*Delete as applicable)* | |
| Level 1 – ‘a little’ - pronounce Welsh words. Able to answer the phone in Welsh (good morning / afternoon). Able to use very basic every-day words and phrases (thank you, please etc.). Level 1 can be reached by completing a one-hour training course.  For more information about the Welsh Language Levels please refer to the Welsh Language Skills Assessment web page, which is available [here](https://www.swansea.ac.uk/welsh-language-standards/compliance/recruitment/). | |

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