


UNIVERSITY OF LIVERPOOL

# Postdoctoral Research Associate in Cybersecurity

**Grade and salary:** Grade 7, £40,704 – £46,970 per annum (or pro rata)
**Working hours:** Full time (job-share / part-time considered)
**Tenure:** Fixed-term from 1 January 2027 for 15 months in the first instance, with the possibility of extension
**Location:** Hybrid working, Liverpool campus
2 days/week on Campus or minimum requirement of 40% on Campus, with 60% considered desirable where possible.
**Faculty:** Faculty of Science & Engineering – School of Computer Science and Informatics, Department of Trustworthy Computing
**Recruiting department contact:** Email: wanpeng.li@liverpool.ac.uk or Email: xiaowei.huang@liverpool.ac.uk
**Job ref:** 119453

## The Role

### Role overview and University context:

The University of Liverpool is seeking a Postdoctoral Research Associate to join the School of Computer Science and Informatics and contribute to LATTICE, a collaborative Horizon Europe project on privacy-preserving, federated cybersecurity. Working within an international consortium, Liverpool leads the project's research on federated digital twin networks and shared cyber-range infrastructure, drawing on the University's world-class research computing facilities, including the Barkla high-performance computing cluster and the Digital Innovation Facility.

You will design, build and validate digital-twin and cyber-range environments that enable organisations to test and strengthen their cyber-defences safely, without exposing sensitive data. This is an excellent opportunity to work at the intersection of cybersecurity, digital twins and trustworthy AI, with strong scope to publish, contribute to open-source software and international standards, and build an independent research profile. The role involves occasional travel within Europe for project meetings and events.

Find out more about the School of Computer Science and Informatics: https://www.liverpool.ac.uk/computer-science/

### Key responsibilities:

- Plan and carry out high-quality original research on digital twins, cyber ranges and privacy-preserving cybersecurity, in line with the project's objectives and timelines.
- Develop and validate digital-twin models of critical-infrastructure and cyber-physical systems, and integrate them with cyber-range and adversary-emulation environments.
- Design and build robust research software, making effective use of high-performance and distributed computing, and apply machine learning (including privacy-preserving techniques) to threat detection and forecasting.
- Collaborate within an international, multi-partner consortium, contributing to joint work and taking part in project meetings and reviews.
- Publish in leading peer-reviewed venues and present at conferences, workshops and project events.
- Contribute to project reports and deliverables, and to dissemination, exploitation and standardisation activities as appropriate.
- Support the wider research culture of the Department, including helping to supervise research students where appropriate.
- Conduct the research in line with relevant data-protection, security and research-integrity requirements (including GDPR).
- Undertake other duties commensurate with the grade as required.

**In addition to the above, all University of Liverpool staff are required to:**

- Adhere to all University policies and procedures, completing all obligatory training and induction modules, including Equality & Diversity and Health & Safety.
- Support the University's vision to drive forward environmental and social equity through delivery of our Sustainability Strategy and associated action plans.
- Demonstrate customer service excellence and continuous improvement in engaging with all stakeholders.
- Respect confidentiality: all confidential information should be kept in confidence and not released to unauthorised persons.
- Participate in the University's Professional Development Review scheme and take a proactive approach to own professional development.
- Embody and uphold the University's Vision and Values.
- Demonstrate flexibility in on-campus-presence to enable participation in business-critical activities, including reasonable participation in such things as: open days, invigilation, welcome week activities, confirmation and clearing and financial year-end activities.

## About you

| Experience |
|---|
| **Essential**<br>1. A track record of research, evidenced by publications (or accepted papers) in reputable peer-reviewed venues, appropriate to career stage.<br>2. Research or applied experience in one or more of: digital twins or simulation of cyber-physical / critical-infrastructure systems; cyber ranges and adversary emulation; or distributed and federated systems. |
| **Desirable**<br>1. Applying machine learning to security, detection or forecasting problems.<br>2. Privacy-enhancing technologies and/or privacy-preserving machine learning.<br>3. Collaborative or multi-partner (e.g. EU) research projects, and/or contributing to open-source software or international standards. |
| **Education, qualifications and training** |
| **Essential**<br>1. A PhD awarded, or thesis submitted prior to appointment, in Computer Science, Cybersecurity or a closely related discipline. |
| **Skills, general and specialist Knowledge** |
| **Essential**<br>1. Strong programming ability, in particular Python, and sound software-engineering practice (version control, testing and documentation).<br>2. Excellent written and spoken English and strong communication skills. |
| **Desirable**<br>1. Experience with high-performance or distributed computing and containerisation, and knowledge of networking and modern cybersecurity concepts. |

| Personal attributes |
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| **Essential**<br>1. Able to work independently and manage your own research to deadlines, and to collaborate effectively and inclusively within a diverse, international team and with external partners. |
| **Desirable** |

## About us

Established in 1881, we are an internationally renowned Russell Group university recognised for our high-quality teaching and research. We are consistently ranked as one of the best universities both nationally and globally, and the majority of our research is rated world leading or internationally excellent. Find out more about us.

### Why Work Here

We recognise, appreciate and celebrate the incredible work our staff do every day. As well as generous terms and conditions, we offer a range of enviable benefits and provide support for colleague's wellbeing and development. Discover more about working here.

### Moving from abroad

As a global institute, we welcome applicants from all nationalities, moving from a different country can be challenging and we would like to help as much as we can, we have put together some information on eligibility to work documentation, accommodation, schools, healthcare, life in Liverpool and the UK as well as other practical information. Discover more about moving from abroad.

### Our Staff

Whether it be their friendly colleagues, supportive managers or our outstanding facilities, our staff can explain better than anyone what it is like to work for us and why they enjoy their role. See what our colleagues have to say.

## How to Apply

### Application process

Our e-recruitment system enables you to register for an online account, where you can view, copy and edit your applications. Set up your account on our Vacancies Portal.

Once you submit your application you will receive an automatic email acknowledgment. You can view your application at any time by clicking into the application history section of your account.

The recruiting department will endeavour to respond to each application. However, if you have not heard within six weeks of the closing date, please take it that your application has not been successful on this occasion.

### Job description

After the closing date this job description will be removed from our website. Should you wish to refer to this information at a later date please ensure you save a copy of this document.

### Right to work

We have a legal responsibility to ensure that you have the right to work in the UK before you can start working for us. If you do not have the right to work in the UK already, any offer of employment will be conditional upon you gaining it. If the role is based outside the UK, you will need to demonstrate your right to work for the country in which you are to be based.

### Disabilities and alternative formats

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University, or if you require copies documentation in alternative formats, please email: jobs@liverpool.ac.uk or telephone 0151 794 6771.