

## RESOURCING/

### JOB DESCRIPTION:

#### Research Associate in Cyber Security



Ref Number:	CEMS 077-21
Salary Scale:	Grade 7: £34,804- £39,152 per annum
Contract:	For a fixed term period of 18 months AND Full-time
School/Department:	School of Computing
Location:	University of Kent, Canterbury
Responsible to <sup>1</sup> :	Professor Shujun Li
Responsible for:	Research work for a funded project
Expected start date:	01/10/2021 or asap

#### The Role

This post is part of an interdisciplinary project titled "[Mobility as a service: MANaging Cybersecurity Risks across Consumers, Organisations and Sectors \(MACRO\)](#)". The project's ambition is to develop the world's first agent-based modelling framework that will explicitly focus on cyber security aspects of MaaS (mobility-as-a-service) ecosystems.

You will work under the supervision of Professor Shujun Li in collaboration with a number of researchers from Cranfield University to investigate how to model cyber security and privacy related risks. This will be studied through the mapping of related behaviours of individuals and organisations to construct agent-based models which simulate mobility-as-a-security (MaaS) ecosystems. You will be experienced in quantitative and qualitative empirical studies (surveys, interviews, focus groups) and will conduct a number of such studies to collect information about cyber security risks from both individuals (e.g., MaaS consumers and non-user individuals who are affected by MaaS) and organisations (e.g., MaaS service operators, e-ticketing systems, and relevant public bodies such as local councils). You will interact with a number of external partner organisations interested in MaaS. As part of the whole project team, you will help the project team to engage with two established UK Research Institutes in Cyber Security, Research Institute for Sociotechnical Cyber Security ([RISCS](#)) and Research Institute in Trustworthy Interconnected Cyber-physical Systems ([RITICS](#)), and the cyber security and MaaS communities in the UK and worldwide.

v.1.5 – January 2020

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<sup>1</sup> Line Manager may be subject to change and will be confirmed in the employment contract issued to the successful candidate.

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Updated:



The successful applicant will be made an Early Career Researcher (ECR) Member of the Institute of Cyber Security for Society ([iCSS](#)) and will benefit from activities and frequent scientific exchanges with other members of the Institute. The Institute represents the University of Kent as one of 19 Academic Centres of Excellence in Cyber Security Research ([ACE-CSRs](#)) in the UK, recognised jointly by the National Cyber Security Centre (NCSC, part of GCHQ) and the Engineering and Physical Sciences Research Council (EPSRC, part of UKRI). The successful applicant will also be made part of the [Cyber security Research group within the School of Computing](#), and have access to resources and activities of the School.

### Key Accountabilities / Primary Responsibilities

- Lead research activity on the modelling of cyber security risks in MaaS ecosystems, for both individuals and organisations
- Lead empirical studies for the collection of useful information for modelling cyber security risks in MaaS ecosystems
- Play an active role in supporting the project as a whole

### Key Duties

- Actively identify and engage with potential participants for empirical studies.
- Design and conduct empirical studies, including managing the ethical applications required.
- Analyse the results from empirical studies.
- Design modelling methods for cyber security risks in MaaS ecosystems, for both individuals and organisations.
- Develop, test and analyse results of reusable modelling components to support the development of larger agent-based models of the MaaS ecosystem.
- Work with the whole project team to ensure effective collaboration with Cranfield University and other supporting organisations.
- Participate in the planning and progress monitoring of your own research work.
- Lead the writing up of results from your own research for publication in leading academic journals and conferences.
- Present research outcomes from the project at academic venues.
- Support the supervisor and other project team members on project management and impact generation activities, including project events, dissemination, external communications, stakeholder and public engagement, and general marketing
- Travel occasionally within the UK and other countries necessary to conduct the research.
- Support activities of iCSS as an ECR member including attending its regular seminars and important events.

Such other duties, commensurate with the grading of the post that may be assigned by the Head of Department or their nominee.

### Health, Safety & Wellbeing Considerations

This role involves undertaking duties which include the Health and wellbeing issues outlined below. Please be aware of these, when considering your suitability for the role.

- Physical stress caused by regular use of Display Screen Equipment and computing devices

- Pressure to meet important deadlines such as submitting research papers to conferences and journal special issues

## Internal & External Relationships

### Internal:

- The supervisor (Professor Shujun Li) on the project work
- Other members of the Institute of Cyber Security for Society (iCSS) and School of Computing on being part of the Institute/School
- Staff of the University's Research and Innovation Services, Division of CEMS, School of Computing and other relevant internal units on project management matters and liaison with external organisations

### External:

- Other researchers of the project, mainly from Cranfield University, for collaborative research
- External organisations especially those supporting or interested in the project (including NCSC) for collecting input/feedback, active collaboration and enlarging the impact of the project
- The two research institutes (RISCS and RITICS) and the wider cyber security research community for disseminating research results and enlarging the impact of the project
- Research funder (EPSRC) on project management matters

## Person Specification

The Person Specification details the necessary skills, qualifications, experience or other attributes needed to carry out the job. Please be aware that your application will be measured against the criteria published below.

Selection panels will be looking for clear evidence and examples in your application, or in your cover letter where applicable, which back-up any assertions you make in relation to each criterion.

Qualifications / Training	Essential	Desirable	Assessed via*
PhD (or nearing completion of study for one) or equivalent, in Computer Science or a closely related discipline, especially with research interests in socio-technical aspects of cyber security and data privacy, human computer interaction, information systems, modelling and simulation, or other related topics	✓		A

Experience / Knowledge	Essential	Desirable	Assessed via*
Good experience of undertaking empirical studies with human participants and managing research ethics	✓		A, I

In-depth knowledge and hands-on experience with modelling and simulation	✓		A, I
Excellent programming skills	✓		A, I
A good record of peer-review publications on scientific journals and conferences in relevant discipline(s)	✓		A, I
Experience of presenting to professional and/or academic audiences	✓		A, I
Research experience in cyber security and/or privacy		✓	A, I
Past experience and knowledge with MaaS ecosystems		✓	A, I
Knowledge on data protection and privacy law		✓	A, I
Research experience with socio-technical aspects especially psychological, organisational and economic		✓	A, I
Knowledge on artificial intelligence (AI) technologies and their practical applications		✓	A, I

Skills / Abilities	Essential	Desirable	Assessed via*
Excellent analytical and problem solving skills	✓		A, I
High level interpersonal and communication skills, and ability to communicate effectively with a wide range of stakeholders	✓		A, I
Excellent skills in planning and prioritisation, and ability to meet deadlines	✓		A, I
Experience of assisting research project management such as event organisation, network building, stakeholder and public engagement, dissemination, external marketing		✓	A, I

Additional Attributes	Essential	Desirable	Assessed via*
Ability to work independently on own initiative, but also successfully as a team member	✓		A, I

**\*Criterion to be assessed via:**

**A** = application form or CV/cover letter

**I** = interview questions

**T** = test or presentation at interview