	Research Role Profile

Job Title:	Research Fellow A

Responsible to:	Head of research group, or principal investigator

Responsible for:	Not applicable

Job Summary and Purpose:
To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities
To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.
Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.
Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.
To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.
To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.
The post holder may occasionally be required to supervise more junior research staff.

Research Role Profile

Person Specification
The post holder must have:
A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields
The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts
Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements
To be available to participate in fieldwork as required by the specified research project

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.

- Help maintain a safe working environment by:

  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand

  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy

- Undertake such other duties within the scope of the post as may be requested by your Manager.

Research Role Profile

Job Title:	Research Fellow B

Responsible to:	Head of research group, or principal investigator

Responsible for:	Responsibility for staff within own research group

Job Summary and Purpose

To plan and deliver research in accordance with the specified research project. To contribute to securing funding for own research projects and for projects for those staff under their direct supervision.

Main Responsibilities/Activities

To contribute to the development of the research of the Faculty, by planning and carrying out research activity within a specified area, often in collaboration with colleagues.

To take a significant role in planning, co-ordinating and implementing research programmes and, where appropriate, commercial and consultancy activities. To take lead responsibility for a small research project or identified parts of a large project. This may include planning fieldwork, data analysis and evaluation and laboratory experimentation. To make decisions about research programmes and methodologies, often in collaboration with colleagues, and to resolve the problems of meeting research objectives and deadlines.

To develop new concepts and ideas to extend intellectual understanding. Assess, interpret and evaluate the outcomes of research, and develop ideas for the application of research outcomes. To take a role in the regular publication of results in appropriate journals, in giving presentations at national and/or international conferences, and in other outputs as required and/or appropriate.

To develop innovative research proposals (as a self-contained item or as part of a broader programme), identifying sources of funding, submitting funding bids, and gaining positive reviews for these. Promoting own area of research.

Continually to update knowledge and develop skills. To extend, transform and apply knowledge acquired from scholarship to research and appropriate external activities.

To carry out management and administrative tasks associated with specified research funding, including managing and developing staff within their projects; risk assessment of project activities; organisation of project meetings and documentation; management of resources, preparation of annual reports, and management or monitoring of research budgets. To oversee and implement procedures required to ensure accurate and timely formal reporting and financial control.

To undertake liaison with external organisations including equipment manufacturers, steering committees, associated academic facilities and commercial users.

Research Role Profile

To contribute to teaching within the Faculty by carrying out student supervision, demonstrating or lecturing duties within the post holder's area of expertise. May be required to contribute to the supervision of research students.

Person Specification

The post holder must have:

Normally a doctoral degree in a relevant discipline, together with appropriate experience of working in a similar area of work.

The post holder will need to demonstrate a high level of competence and independent standing in research by being nationally recognised within their area of discipline, publishing regularly in recognised appropriate journals and attracting research funding for their own work or for other staff within the research group.

Relationships and Contacts

The post holder may have a key responsibility to the principal investigator, with prime responsibility for reporting and liaison with external funding bodies or sponsors. As a senior member of the project team, the post holder will also supervise the activities of research and technician staff within the particular research group

Special Requirements

To be available to participate in fieldwork as required by the specified research project.

All staff are expected to:

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.

- Help maintain a safe working environment by:

  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand

  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy

- Undertake such other duties within the scope of the post as may be requested by your Manager.

Addendum to Role Profile

Research Role Profile

Job Title:	Research Fellow in adaptive online safety and privacy software

Job Summary and Purpose:

This information sheet should be read in conjunction with the accompanying generic Research Role Profile and will be used for shortlisting processes. More specifically the post holder will be expected to:

(i)   Work with psychology and human factors researchers to develop immersive simulation environments that explore and develop a new understanding of how online privacy and safety and can be compromised during life transitions.

(ii)   Design and develop privacy sensitive machine learning techniques to adapt and meet the changing needs of citizens during significant life transitions.

(iii)   Design and develop new privacy enhancing technologies that enable citizens to negotiate their changing privacy needs during life transitions without increasing their attack surface or making them vulnerable to new threats and actors online.

(iv)   Collaborate with other staff on the project to develop pilot and proof-of-concept systems for: fundamental new privacy enhancing technologies, privacy sensitive machine learning to personalise automatic online safety responses and immersive simulation environments to explore how safety and can be compromised online during life transitions.

(v)   Work with other researchers on the project to facilitate reproducible research and public engagement.

(vi)   Contribute to participative research engagement events and activities with stakeholders.

(vii)   Meet on a weekly basis with project staff, and attend project meetings and present results at other sites as required;

(viii)   Publish and present research in high-quality international journals and conferences.

(ix)   Pro-actively organise and manage own time and research-related activities.

(x)   Report orally and prepare papers reporting progress and delivery of project outcomes, and be able to communicate at both technical and high-level for example with project research partners.

(xi)   Perform any other duties associated with the project, as deemed appropriate to the grade by the Principal Investigator.

(xii)   Promote the research and activities of the project and the Distributed and Networked Systems (DANS) group and the Surrey Centre for Cyber Security (SCCS) in national and international forums as well as in cohort activities related to the REPHRAIN National Research Centre on Privacy, Harm Reduction and Adversarial Influence Online.

Research Role Profile

Main Responsibilities/Activities

Working with the project investigators and other researchers, develop a research agenda for the AP4L, identifying important online safety and privacy problems experienced by citizens during life transitions and developing innovative privacy-sensitive solutions to address these problems.

Meet on a weekly basis on campus with project staff and wider research groups (DANS and SCCS).

Attend project meetings and present results at other sites as required

Give oral and written reports on project progress and outcomes. Be able to report at both a technical low-level and conceptual high-level to a range of audiences including the public and industry

Continually update knowledge and develop skills

Carry out routine administrative tasks associated with a specified research project, for example risk assessment of research tasks, organisation of project meetings and documentation. This will entail planning own day-to-day research activity within the framework of the agreed programme, dealing with problems that may affect the achievement of research objectives and deadlines and implementing procedures required to ensure accurate and timely delivery.

Person Specification

The post holder must have:

Doctoral level research experience in computer science or a related subject;

Significant research experience in a topic such as Online Safety and Privacy, or methods such as data analysis, machine learning and/or deep learning applied to understanding online lives.

Ability to work independently, with strong organisational and time management skills

Software development experience relevant to online safety and privacy, using languages such as Python and JavaScript.

The post holder would ideally have:

Experience developing Privacy Enhancing Technologies and Crypto Software is desirable.

Direct research experience in developing Privacy Enhancing Technologies, Privacy Sensitive Machine Learning or Usable Security and Privacy, including developing new algorithms.

Strong writing skills across different levels of technical audience are desirable

A track record of publishing academic papers, open-source software tools and/or research datasets is desirable

Relationships and Contacts
Direct responsibility to Principal Investigator Prof. Nishanth Sastry. Informal enquiries are welcome and should be directed to Prof Nishanth Sastry, n.sastry@surrey.ac.uk

Additional Background Information
This post is part of an EPSRC project **AP4L: Adaptive PETs to Protect & emPower People during Life Transitions**, funded through the Protecting Citizens Online Call 2. The aim of this project is to undertake research in online privacy & vulnerability challenges that people face when going through major life transitions such as relationship breakdowns; LBGT+ transitions or transitioning gender; entering/leaving employment in sensitive sectors such as the Armed Forces; and developing a serious illness or becoming terminally ill. (More details in the summary given at the end of this section) . The postholder will be responsible for designing and developing privacy enhancing technologies and privacy sensitive machine learning techniques to adapt and meet the changing needs of citizens during significant life transitions. They will also work with psychology and human factors researchers to develop immersive simulation environments that explore and develop a new understanding of how online privacy and safety and can be compromised during life transitions. The postholder will be part of a cohort of researchers working with the REPHRAIN National Research Centre on Privacy, Harm Reduction and Adversarial Influence Online. A key aspect of the project is working closely with 26 core partners spanning legal enforcement agencies (e.g., Surrey Police), tech companies (e.g., Facebook, IBM), support networks (e.g., LGBT Foundation, Revenge Porn Helpline, Macmillans Cancer Care), financial agencies (Mastercard, Lloyd's) and regulators such as Ofcom. A six-part radio series has been commissioned by the BBC for disseminating the key project messages. **Relevant Research Environment in the Department** The postholder will be based in the Department of Computer Science, which has a world-class reputation in Cyber Security, Distributed and Networked Systems, and Nature Inspired Computing & Engineering, and regularly publishes at top-level conferences and journals. The Surrey Centre for Cyber Security (SCCS) is only one of seven in the UK holding recognition as an Academic Centre of Excellence in both Cyber Security Research and Cyber Security Education by the UK government. SCCS has world-leading research expertise in applied cryptography, trusted computing, secure systems, privacy and authentication, secure communications, blockchain and distributed ledger technologies, and security verification. The Distributed and Networked Systems (DANS) group is internationally recognised for its fundamental and applied research in several areas such as consensus protocols, distributed trust and coordination, fault-tolerance, edge and cloud computing, networks in

space, web tracking and privacy, online harms such as hate speech and misinformation in social networks.

Several of the Project Investigators are also Surrey AI Fellows in the new Surrey Institute for People Centred AI, and also members of the Nature Inspired Computing and Engineering (NICE) group, which holds world-leading expertise in machine learning and AI, including trustworthy AI (explainable, secure and privacy preserving machine learning), systems biology, bioinformatics, image processing, natural language processing, computational neuroscience, computational optimization, AI planning and optimal control.

Project Summary: AP4L: Adaptive PETs to Protect & emPower People during Life Transitions

AP4L is a 3-year program of interdisciplinary research, centring on the online privacy & vulnerability challenges that people face when going through major life transitions. Our goal is to develop privacy-by-design technologies to protect & empower people during these transitions. Our work is driven by a narrative that will be familiar to most people. Life often "just happens", leading people to overlook their core privacy and online safety needs. For instance, somebody undergoing cancer treatment may be less likely to finesse their privacy setting on social media when discussing the topic. Similarly, an individual undergoing gender transition may be unaware of how their online activities in the past may shape the treatment into the future. This project will build the scientific and theoretical foundations to explore these challenges, as well as design and evaluate three core innovations that will address the identified challenges. AP4L will introduce a step-change, making online safety and privacy as painless and seamless as possible during life transitions

To ensure a breadth of understanding, we will apply these concepts to four very different transitions through a series of carefully designed co-creation activities, devised as part of a stakeholder workshop held in Oct'21. These are relationship breakdowns; LBGT+ transitions or transitioning gender; entering/ leaving employment in the Armed Forces; and developing a serious illness or becoming terminally ill. Such transitions can significantly change privacy considerations in unanticipated or counter-intuitive ways. For example, previously enabled location-sharing with a partner may lead to stalking after a breakup; 'coming out' may need careful management across diverse audiences (e.g - friends, grandparents) on social media.

We will study these transitions, following a creative security approach, bringing together interdisciplinary expertise in Computer Science, Law, Business, Psychology and Criminology.

We will systematise this knowledge, and develop fundamental models of the nature of transitions and their interplay with online lives. These models will inform the development of a suite of technologies and solutions that will help people navigate significant life transitions through adaptive, personalised privacy-enhanced interventions that meet the needs of each individual and bolster their resilience, autonomy, competence, and connection. The suite will comprise:

(1) "Risk Playgrounds", which will build resilience by helping users to explore potentially risky interactions of life transitions with privacy settings across their digital footprint in safe

ways

(2) "Transition Guardians", which will provide real-time protection for users during life transitions.

(3) "Security Bubbles", which will promote connection by bringing people together who can help each other (or who need to work together) during one person's life transition, whilst providing additional guarantees to safeguard everyone involved.

In achieving this vision, and as evidenced by £686K of in-kind contributions, we will work with 26 core partners spanning legal enforcement agencies (e.g., Surrey Police), tech companies (e.g., Facebook, IBM), support networks (e.g., LGBT Foundation, Revenge Porn Helpline) and associated organisations (e.g., Ofcom, Mastercard, BBC). Impact will be delivered through various activities including a specially commissioned BBC series on online life transitions to share knowledge with the public; use of the outputs of our projects by companies & social platforms (e.g., by incorporating into their products, & by designing their products to take into consideration the findings of our project) & targeted workshops to enable knowledge exchange with partners & stakeholders.