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## School of Computing

### Research Assistant/Associate (ERC)

Grade: F

Vacancy Ref: D87573R

### Main Duties and Responsibilities

To assist with the research of the European Research Council (ERC) Starting Grant CASCade. CASCade (Confidentiality-Preserving Security Assurance) is an ambitious project to establish the capacity to certify complex data structures and system topologies, such that their security properties can be proven in zero-knowledge.

To developing new digital signature primitives to certify graph data structures as well as efficient protocols to prove their properties to verifiers in zero-knowledge.

1. Leading cryptography research within the ERC research project.
2. Playing a leading role in dissemination of cryptography and security research, including publications to first tier conferences and leading journals
3. Working with local, national and international partners of the ERC Grant to develop efficient cryptographic primitives for graph signatures.
4. Contributing to system development for building an effective framework for the certification of complex data structures and system topologies.
5. Contributing to the supervision and undertaking day-to-day management of postgraduate students at Newcastle University's School of Computing.
6. Leading and contributing to new cryptography and security project funding applications.
7. Initiating and developing research collaborations on behalf of the ERC Grant.
8. Contributing to the coordination of the School of Computing, Secure & Resilient Systems Research Group and the Academic Centre of Excellence in Cyber Security Research.
9. Contributing to University, School of Computing, the Secure & Resilient Systems research group, and Centre's public engagement activities (including School and University open days).

### Research Role Profile

As part of our commitment to career development for research staff, the University has developed 3 levels of research role profiles. These profiles set out firstly the generic competences and responsibilities expected of role holders at each level and secondly the general qualifications and experiences needed for entry at a particular level. It is unlikely that any single member of staff will be applying all these competences at any one time but he or she would be expected to display most of them over a period of time.

Please follow this link to our [Research Role Profiles](#)

## Person Specification

### Knowledge (inc. qualifications)

#### *Essential*

- PhD awarded (or close to completion) or equivalent and substantial research experience in cryptography and its applications with very strong cryptography and protocol development skills.
- Internationally recognized expert in cryptography and its applications (indicated through outstanding track record), with particular expertise in (a combination of) digital signatures schemes, zero-knowledge proofs of knowledge, or attribute-based credentials

### Skills (professional, technical, managerial, practical)

#### *Essential*

- Very strong cryptography skills
- Strong protocol and software development skills
- Strong project management skills
- Excellent written and oral communication skills

### Experience and Achievements (paid or unpaid)

#### *Essential*

- International outstanding research and/or practice outputs in cryptography and its applications.
- Having strong interests of system and cloud security

#### *Desirable*

- Strong cryptography experience in attribute-based credentials and related proof systems, authenticated data structures or applicable multiparty computation.
- Experience with the Camenisch-Lysyanskaya signature scheme or related signature schemes and proof systems.
- Familiarity with trusted computing platforms and attestation.
- Experience in working in interdisciplinary environments.
- Track record of delivering cryptography systems for real-world applications
- Significant experience of project management and team leadership.

### Other

#### *Desirable*

- Available for national and international travel and occasional weekend working.

For full details about this vacancy and essential information on how to apply, visit our Job Vacancies web page at <http://www.ncl.ac.uk/vacancies/>