Candidate Information

Position: Research Fellow - Security Analytics
School/Department: Centre for Secure Information Technologies
Reference: 18/106833
Closing Date: Monday 29 October 2018
Salary: £33,199 - £39,610 per annum (potential to progress to £43,266 per annum through sustained exceptional contribution)
Duration: 18 months

JOB PURPOSE:

Security analytics involves the development of novel artificial intelligence techniques applied to security analytics. Applications include malware detection on Android platforms, software vulnerability recognition, network intrusion detection, and advanced persistent threat. The purpose of this job requires the successful applicant to be an active member of the Security Intelligence research team in CSIT. For them to assist in the planning and delivery of the application of machine learning techniques to security analytics and in the development of research proposals in the area of security analytics. Thereby, helping ensure the overall research objectives of CSIT are met.

MAJOR DUTIES:

1. Undertake high quality research in the area of machine learning for security analytics.
2. Design, develop and refine experiments in order to evaluate machine learning algorithm performance.
3. Carry out analyses, critical evaluations, and interpretations using methodologies and other techniques appropriate to machine learning.
4. Present regular progress reports on research to members of the research group or to external audiences to disseminate and publicise research findings.
5. Prepare, often in consultation with supervisor, material for publication in national and international journals and presentations at international conferences such as IEEE Security and Privacy.
6. Assist grant holder in the preparation of funding proposals and applications to external bodies.
7. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
8. Read academic papers, journals and textbooks to keep abreast of developments in own specialism and related disciplines.

Planning and Organising:
1. Plan for specific aspects of research programmes. Timescales range from 1-6 months in advance and contribute to research group planning.
2. Plan for the use of research resources, laboratories and workshops where appropriate.
3. Plan own day-to day activity within framework of the agreed research programme.
4. Plan up to a year in advance to meet deadlines for journal publications and to prepare presentations and papers for conferences.
5. Coordinate and liaise with other members of the research group over work progress.

Resource Management Responsibilities:
1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff and any students who may be assisting with research.

Internal and External Relationships:
1. Liaise on a regular basis with colleagues and students.

2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
3. Join external networks to share information and ideas.

ESSENTIAL CRITERIA:
1. Have or be about to obtain (6 months from date of advertisement of role) a PhD in the area of machine learning and/or AI.
2. At least 3 years high quality research experience in machine learning/AI as evidenced by strong track record of high quality original publications in leading journals and conferences in relevant area, commensurate with career stage.

DESIRABLE CRITERIA:
1. Application domain of the PhD is in the area of security.
2. Experience in deep learning neural networks, particularly adversarial, graph mining and/or reasoning with uncertainty.
3. Experience in security applications such as malware detection and network intrusion detection.
4. Experience of collaborative research working in a team with industry.
5. Experience in initiating and developing research plans.
6. Good programming skills in Matlab and/or C/C++.
7. Experience using PyTorch, Caffe, and/or TensorFlow.
8. Ability to train and test machine learning systems using appropriate datasets.
9. Ability to give good audio-visual presentations.