POSITION DESCRIPTION

Research Associate

Position Level
Level A

Faculty/Division
Engineering

Position Number
00093899

Original document creation
07/06/2021

Position Summary

The School of Computer Science and Engineering is one of the largest and most prestigious computing schools in Australia. It offers undergraduate programs in Software Engineering, Computer Engineering, Computer Science and Bioinformatics, as well as a number of combined degrees with other disciplines. It attracts excellent students who have an outstanding record in international competitions. At the postgraduate level there is a large PhD research program and coursework programs at the Master's and Graduate Diploma level in Computing and Information Technology and at Graduate Certificate level in Computing. Our research mission is to be at the forefront of research into new and exciting innovations with profound national and international impact. For further information about the School, please visit http://www.cse.unsw.edu.au/

The Research Associate will work on a funded project for developing and implementing methods to automatically find vulnerabilities and attack strategies in common Internet routing protocols. The project aims to develop network protocol fuzzing tools using machine learning methods for automating the testing and evaluation of network protocol vulnerabilities discovery. The project involves multiple partners including University of Adelaide, CSIRO's Data61 and DSTG.

The role of Research Associate reports to Professor Salil Kanhere and has no direct reports.

Accountabilities

It is expected that the appointee will progress on a continual satisfactory and upward trajectory in their performance and specific performance expectations will be set individually with the Head of School/Supervisor. Specific responsibilities for the role include:

- Conduct research in and develop new tools and techniques for automatically finding vulnerabilities and attack strategies in common Internet protocols independently and as part of a team.
• Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and partners.
• Contribute to the development of software tools to demonstrate the project outcomes and for handover to the partners.
• Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones.
• Contribute to the preparation of research proposal submissions to funding bodies and actively seek collaboration with industry partners as appropriate.
• Participate in and/or present at conferences and/or workshops relevant to the project as required.
• Assist with the supervision of research students in the research area and contribute to teaching where required.
• Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.
• Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that your actions or omissions do not impact on the health and safety of yourself or others.

Skills and Experience

• PhD (or soon to be awarded) in computer science, electrical engineering or related area with demonstrated experience in machine learning, computer networks and cybersecurity.
• Demonstrated ability to conduct independent research with limited supervision.
• Demonstrated track record of publications in top-rated journals and conference in the discipline.
• Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships.
• Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders, external clients and students.
• Ability to supervise undergraduate students or equivalent experience in the supervision of junior staff in related projects
• Expertise in (and ability to learn others if necessary):
  o one or more of R, Stata, scikit-learn;
  o one or more deep learning tools such as TensorFlow, Keras, Caffe;
• An understanding of and commitment to UNSW's aims, objectives and values in action, together with relevant policies and guidelines.
• Ability and capacity to implement required UNSW health and safety policies and procedures.

PRE EMPLOYMENT CHECKS REQUIRED FOR THIS POSITION
Verification of qualifications
About this document

This Position Description outlines the objectives, desired outcomes, key responsibilities, accountabilities, required skills, experience and desired behaviours required to successfully perform the role.

This template is not intended to limit the scope or accountabilities of the position. Characteristics of the position may be altered in accordance with the changing requirements of the role.
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Accountabilities

Specific responsibilities for the role include:

- Conduct research in and develop new tools and techniques for automatically finding vulnerabilities and attack strategies in common Internet protocols independently and as part of a team.
- More significantly contribute to the project and lead areas of the project where the opportunity arises.
• Disseminates research results through writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners.

• Participates in the definition of research directions and actively contributes to the coordination of research activities and research outputs to meet project milestones.

• Create a scholarly impact in the discipline which is recognised by peers in advancement of disciplinary knowledge.

• Achieve a citation rate or proportion of research outputs in most prestigious outlets (e.g., A/A* or equivalent) in line with discipline and leading universities.

• Independently seek and apply for external funding opportunities to grow and enhance the research project.

• Participate in and/or present at conferences and/or workshops relevant to the project as required.

• Joint supervision of honours and HDR students.

• Align with and actively demonstrate the UNSW Values in Action: Our Behaviours and the UNSW Code of Conduct.

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