



POSITION DESCRIPTION

Position Title:	Software Systems Vulnerability Researcher
Position Reference Number:	ECRCEWD013b
Division	Cyber and Electronic
Position Classification:	S&T3-4 (APS4/5-6)
Position Location:	Canberra
Security Level:	TSPV
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Academic Disciplines

Aerospace/ Aeronautical Engineering, Naval Architecture	Chemical, Radiological, Biological, Food sciences	Materials Science
Computer Sciences, IT, Software Engineering, Telecommunications	Mathematics and physics	Psychology and Social Sciences
Mechanical and Mechatronic Engineering (including robotics)	Electronic/ Electrical Engineering	Other

Position Overview

The software systems vulnerability researcher will contribute to the state of the art technology development in support of automating at scale the security assessment of software systems. The successful candidate will be part of a multi-disciplinary research and development team, exercise a high level of initiative and motivation, and contribute to research and technology development in support of Australia's Defence Force. They will also have a good knowledge and, or strong desire to learn about software security, program analysis, operating systems, programming language design and implementation, network protocols and computer architectures.

Position Duties

The major responsibility of the Software Systems Vulnerability Researcher is to research, design and implement novel program analysis techniques that can support the security analysis of software to assist a security analyst/vulnerability researcher. The successful applicant will have significant knowledge of a wide range of computing systems, their implementation and operation and be willing to undergo extensive training and post graduate education. They will exercise initiative and judgement to evaluate different techniques and applications to meet Defence challenges, and engage with stakeholders to identify expectations, deliver services, and achieve outcomes.

Key attributes expected of the candidate for this position area

1. Problem solving ability, rigor, and creativity to identify appropriate solutions to demanding challenges.
2. Application of scientific, engineering principles and concepts, including investigation and analysis to solving technical problems.
3. Demonstrated ability in, or willingness to learn, the application and development of various program analysis tools and techniques such as static, dynamic and symbolic analysis, reverse engineering and source code auditing to target software systems.
4. Enthusiasm to participate in research and development activities that result in technology transfer that benefits Defence mission outcomes.
5. Experience with concepts in computer systems architecture, operating systems, systems programming, network protocols, program language design and implementation in particular compilers and modern managed language environments and virtualisation.
6. Ability to work within a team environment transitioning research outcomes to Defence capabilities.
7. Good interpersonal, written, and oral communication skills.
8. Willingness to undertake further studies and travel as required.

Other Requirements

1. Occasional domestic and international travel
2. Willingness to pursue higher education particularly doctoral research in program analysis applied to vulnerability research.