Position Title:	**AI & Machine Learning Researcher**
Position Reference Number:	ECRCEWD010b
Division	Cyber and Electronic Warfare Division
Position Classification:	S&T3-4 (APS4/5-6)
Position Location:	Edinburgh
Security Level:	Top Secret NV2 minimum
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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 candidate will be part of an team undertaking applied research towards developing, adapting and applying Artificial Intelligence (AI) and Machine Learning (ML) techniques, with application to Adversarial Machine Learning (AML) and/or Autonomous Cyber Operations (ACO).

AML involves countering data-driven attacks on ML solutions, whereby malicious actors modify training or test data to mislead and/or subvert ML predictions. The candidate will help to devise new robust learning approaches suitable for adversarial environments. They will undertake research and development into the design and assessment of robust ML solutions for Defence applications, including reinforcement learning and deep learning.

ACO involves adapting and applying AI and ML towards rapid and scalable decision-making without dependence on human operators. The candidate will apply techniques for inference, reasoning and planning under uncertainty, probabilistic graphical models, decision making or learning (reinforcement, supervised, unsupervised and deep learning) to perform cyber security missions autonomously.

The role provides exposure to S&T challenges in cyber security and operations in both military and intelligence contexts. In addition, there exists the opportunity to work closely with Australian and international research partners, Defence clients and cyber security domain experts. The successful candidate will also be supported with training in aspects of cyber security as required, and encouraged to further develop their scientific expertise and engage with the scientific community.

Position Duties

Under guidance and as part of a multi-disciplinary team, the candidate will:
- Contribute to research developing, adapting and applying Artificial Intelligence and/or Machine Learning techniques towards Adversarial Machine Learning and/or Autonomous Cyber Operations applications.
- Develop software as required to support the development and evaluation of algorithms.
- Prepare scientific publications and reports, present outcomes, demonstrate technologies and interact with academic/scientific community.
- Maintain up to date knowledge in specific areas of AI and ML and broaden knowledge across areas relating to AML and ACO including cyber security.
- Enhance S&T capability through targeted collaboration with other DST Group teams, academia, industry and other national/international research agencies.

Other Requirements

Applicants must meet eligibility criteria to obtain Top Secret Negative Vetting 2 security clearance.