CyberSEA Research Lab
Carleton University
https://carleton.ca/cybersea/
@carleton-cybersea

Systems and Computer Engineering
Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

August 7, 2025

Position Available: Postdoctoral Fellowship

The Cyber Security Evaluation and Assurance (CyberSEA) Research Lab at Carleton University is actively seeking applicants for a Postdoctoral Fellowship as part of a funded research project for the General Dynamics Mission Systems – Canada/Carleton University Cyber Operations Reference Lab (GCOR Lab). The project will be conducted in collaboration with General Dynamics Mission Systems - Canada (GDMS-C).

Position Details

- **Position:** Postdoctoral Fellow
- **Expected Start Date:** September 1, 2025 (or as soon as possible thereafter)
- **Hours:** Full-Time
- **Appointment Term:** 1 year, with an opportunity to continue depending on performance and funding availability
- **Duties and Responsibilities:**
  - Serve as the primary contact and research lead on the GDMS-C project(s) within the GCOR Lab portfolio
  - Collaborate closely with external project partners, maintaining regular communication and managing shared objectives
  - Oversee and maintain lab equipment and infrastructure used in GCOR and related projects
  - Support and contribute to other CyberSEA research initiatives, including preparing research publications, contributing to proposals and reports, and participating in lab discussions and collaborative writing sessions
  - Provide mentorship and guidance to a small team of 2–4 junior researchers, including undergraduate and graduate students
  - Help foster an inclusive and productive lab environment focused on high-impact research researchers
- **Salary:** The annual salary for this position will be in the range of $55,000-$60,000 CAD, commensurate with qualifications and experience, and with the additional ability to opt into an extended health and dental benefit plan. The final offer will be determined at the time of appointment and will take into consideration multiple factors, including the candidate's academic standing, research experience and potential, alignment with the lab's priorities, and the availability of funding. This position will be considered unionized and the successful candidate will be a member of PSAC Local 77000. Information on this bargaining unit can be found here: https://psac77000.ca/.

Project Description

The General Dynamics Mission Systems–Canada/Carleton University Cyber Operations Reference Lab (GCOR Lab) is a collaborative research facility dedicated to advancing cybersecurity and cyber operations through applied, interdisciplinary research. Operated in partnership with General Dynamics Mission Systems–Canada, the GCOR Lab is hosted within the CyberSEA Research Lab at Carleton University and supports a range of projects that integrate cybersecurity, artificial intelligence, and policy research.

Current GCOR Lab initiatives include:

- **Cyber Gymnasium**: A training and simulation platform designed to educate cyber operators, technicians, and analysts in defending network systems against adversarial attacks and tactics. The platform supports hands-on, scenario-based learning in a controlled cyber operations environment.
- **Deception Network Simulation**: A project focused on developing network topology models with diverse host/node configurations using the RANGE modeling platform. These models generate datasets that will be used to train machine learning and AI algorithms for the purpose of automating cyber defense responses.
- **Identify and Access Management in DDIL Environments**: A project aimed at identifying and evaluating lightweight directory services and dynamic name resolution mechanisms suitable for tactical DDIL (Disconnected, Disrupted, Intermittent, Low-bandwidth) environments. The work emphasizes efficient, resilient access control under operational constraints.

In addition to contributing to these GCOR Lab projects, the successful candidate may also be expected to support and collaborate on other CyberSEA Lab research initiatives, depending on evolving project needs. These projects span a wide range of topics related to secure systems engineering, security evaluation and assurance, compliance frameworks, and critical infrastructure protection, providing ample opportunity for diverse research engagement and interdisciplinary collaboration.

Desired Skills/Qualifications

Applicants should hold a PhD in Software Engineering, Computer Science, or a closely related discipline. The ideal candidate will be self-motivated, able to work independently, and skilled at communicating within a collaborative, interdisciplinary research environment. Prior experience with industry-academia collaborative research projects is highly valued.

A strong background in **networking** and **network security** is essential, as these are core areas of focus in the GCOR Lab projects. Relevant experience may include secure network architectures, identity and access management, network modeling and protocol analysis, and/or cyber defense in distributed systems. A solid research track record in areas aligned with other CyberSEA Lab projects such as cybersecurity, security evaluation, security assurance, risk assessment, or secure systems engineering will also be considered an asset.

Candidates should demonstrate strong organizational, project management, and communication skills, and be comfortable working with both academic and non-academic stakeholders.

Host Research Institute Information

Carleton University is a public comprehensive university, founded in 1942, in Ottawa, Ontario, Canada. The research-intensive Faculty of Engineering and Design at Carleton University is recognized as one of Canada's leading institutions in the study and research of engineering, architecture, industrial design and information technology. Since the inception of engineering at Carleton in 1945, our experts have pushed the bounds of innovation and discovery. Carleton focuses on anticipating the needs of industry and society, and offers forward-thinking programs with real world application and produces research that is helping to shape our present and future. The Department of Systems and Computer Engineering is a recognized world-class institution in software engineering, computer systems engineering, communications engineering, and biomedical engineering. Together with the Department of Electronics, the Department of Systems and Computer Engineering constitutes one of the largest and most research-intensive centres for Electrical and Computer Engineering and Software Engineering education and research in Canada. The Cyber Security Evaluation and Assurance (CyberSEA) Research Lab conducts advanced academic research to develop systematic and rigorous approaches for evaluating and assuring the cyber security of software-dependent systems.

Further Information

For more information about Postdoctoral Fellowships at Carleton University and the Department of Systems and Computer Engineering, please visit: https://carleton.ca/postdocs/.

How to Apply

Interested applicants are to send a **CV**, **cover letter** (maximum one page) detailing your research interests, qualifications, and experience, and contact information for at **least two references** by email to the CyberSEA Lab Director:

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For more information about how to apply, please visit: https://carleton.ca/cybersea/positions-available/

Application Deadline

Applications will be reviewed as they arrive until a suitable candidate is found.