CyberSEA Research Lab
Carleton University
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Canada's Capital University
Systems and Computer Engineering
Carleton University
1125 Colonel By Drive
Ottawa, ON K1S 5B6

November 3, 2019

Position Available: Ph.D. Candidate
System-Level Security for IoT-enabled e-Health Systems

The Cyber Security Evaluation and Assurance (CyberSEA) Research Lab at Carleton University is actively looking for a graduate student at the Doctoral level to work on a funded research project entitled *System-level Security for IoT-enabled e-Health Systems* starting in September 2020.

Project Description

The evolution of e-health systems with increased connectivity through the advancement of the Internet of Things (IoT) has exposed them to a new frontier of cybersecurity vulnerabilities from which they were previously shielded. Healthcare providers today depend on nearly 100 million connected medical devices to deliver cost-effective and lifesaving treatment to patients, and the number of these connected devices is expected to double in the next 2-3 years.

The primary goal of this work is to develop a comprehensive system-level security platform, capable of guaranteeing acceptable levels of security, privacy, and trust in a heterogeneous IoT-enabled e-health system. We aim to develop a system-level security management platform that can help to identify vulnerabilities in a heterogeneous e-health system and inform the development of suitable security mechanisms and protocols.

Duties and Responsibilities

Dissertation: As part of the Doctoral Program requirements, candidates will complete a disseration on a topic aligned with the research mission of the CyberSEA Research Lab including but not limited to: cybersecurity evaluation and assurance, threat modeling, risk assessment and management, modelling and simulation for security, software engineering, distributed systems, and/or formal methods. The thesis topic may or may not be directly related to the applied project work from the Research Assistantship. Candidates will be expected to spend approximately 70% of their time dedicated to their disseration work.

Research Assistantship: The funding for this position will be provided from applied research on the System-level Security for IoT-enabled e-Health Systems project sponsored by the Canadian Safety and Security Program (CSSP) led by Defence Research and Development Canada's Centre for Security Science (DRDC CSS), in partnership with Public Safety Canada. Candidates will be expected to spend approximately 30% of their time dedicated to carrying out the work required for the successful completion of the project.

Desired Skills/Qualifications

Suitable candidates will have a Master's degree in Software Engineering, Computer Science, or a related field. Ideal candidates will be self-motivated with an ability to work independently and to communicate effectively in a team environment. A background in computer security, security engineering concepts, and systems engineering concepts is highly desirable.

All candidates must satisfy the Minimum Admission Requirements for Doctoral Programs at Carleton University.

Further Information

For more information about Graduate Studies at Carleton University and the Department of Systems and Computer Engineering, please visit: https://carleton.ca/sce/graduate-studies/. For more information about applying for Graduate Studies at Carleton University, please visit: https://graduate.carleton.ca/apply-online/. For more information about funding for Graduate Studies, please visit: https://graduate.carleton.ca/financial-assistance/admissions-funding/.

About the CyberSEA Research Lab

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.

For more information, please visit: https://carleton.ca/cybersea/

How to Apply

Interested applicants are to send a **CV** and **Statement of Interest** detailing your research interests, background, and experience 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/