



**CyberSEA Research Lab**  
Carleton University  
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in @carleton-cybersea

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

## Position Available: Undergraduate Student Researcher

*Reducing Bias and Racism in Secure Software Development  
with Human-Centric Goals for Security (HUGS)*

The **Cyber Security Evaluation and Assurance (CyberSEA) Research Lab** at Carleton University is actively looking for an undergraduate student researcher to contribute to collaborative research project with the **Advanced Requirements and Software Engineering (ARiSE) Research Lab** at Ontario Tech University.

### Position Details

- **Position:** Undergraduate Student Researcher
- **Expected Start/End Dates:** September 8, 2025 — March 31, 2026
- **Hours:** Part-Time (10-20 hours per week)
- **Duties and Responsibilities:** This is a research-focused position, not a software development position. The primary goal is to support and contribute to academic research activities such as conducting literature reviews, exploring new concepts, designing experiments, analyzing results, and assisting with research documentation.
- **Salary:** Successful candidates will receive a research assistantship. Specific details are determined at the time of offer and consider numerous factors such as academic standing, research potential, availability of funds, etc. However, the minimum hourly rate is \$17.20/hour after taxes.

### Project Description

Racism and bias in digital technologies can have far-reaching consequences, particularly when it comes to creating software systems that are meant to protect and serve diverse communities. This project focuses on the research question: “How can we identify and reduce issues related to racism and bias during the development of secure software systems, ensuring they are fair and inclusive for all?”

A key distinction between *secure software systems* and ordinary software systems lies in their design intent and operational focus. Secure systems are purposefully built to protect sensitive information, ensure privacy, and defend against malicious threats, while ordinary systems primarily focus on functionality and usability. In the context of bias and racism, secure systems carry an additional responsibility: they need to protect critical information and services from a wide range of potential threats, while still providing fair and equitable access to all users and avoiding discriminatory practices.

This project adopts a human-centered approach to cybersecurity by integrating fairness, equity, and inclusion into the earliest stages of designing secure systems. Our goal is to identify Inclusive Human-Centric Goals for Security (HUGS) that reflect the values and needs of diverse users. For instance, we aim to address issues like algorithmic bias, accessibility, and ensuring equal opportunities for people of different backgrounds to feel safe and protected online.

To address the problem and answer our research question, we will use goal modeling methods and practices to model the goals, objectives, plans, and resources required for considering issues related to bias and racism in secure system development.

## Desired Skills/Qualifications

Suitable candidates will be enrolled in Bachelor's degree in Software Engineering, Computer Science, or a related field at Carleton University. Ideal candidates will be self-motivated with an ability to work independently and to communicate effectively in a team environment. A background in requirements engineering and an interest in security and EDI challenges in software engineering are essential.

## 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:

**Jason Jaskolka, Ph.D., P.Eng.**

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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.