



Department of Cyber Security Engineering

College of Engineering and Computing

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: cybersecurity.gmu.edu

Graduate Research Fellow in Secure Microarchitecture Design

Security, Privacy, and Reverse Engineering (SPIRE) Lab

George Mason University, Fairfax, VA

Position Title: Graduate Research Fellow/Assistant in Hardware and Cyber Security

Salary: \$38,000 - \$42,000 per annum

Benefits: Full tuition and health insurance coverage

Appointment: Full-time

Start Date: January 2027/August 2027

Location: Fairfax, VA 22030

Contact: Dr. Tanvir Arafin (marafin@gmu.edu)

We are recruiting **two PhD** Research Fellow/Assistant(s) in secure hardware and microarchitectural design for AI/Robotics positions at the SPIRE Lab at George Mason University. These positions will provide fully funded student support for two PhD students in the lab. The students will work on projects in secure accelerator design and GPU-based vulnerability exploits and mitigation techniques in the robotics and agentic AI-based application domains.

Basic Qualifications:

- A Master's degree in Computer Science, Electrical Engineering, or similar.
- Prior research experience in hardware and cybersecurity topics.
- Proficiencies in either C++ or Java. Python proficiency is expected but optional.
- Self-motivation, passion, and discipline to pursue a PhD in security and machine learning-related topics.

Application Process:

If interested, please email Professor Arafin (marafin@gmu.edu) and include your CV, academic transcripts, and prior publications. Please note that this position is for PhD applicants only. Selected candidates will be short-listed for interviews. The awardee(s) will be enrolled in the PhD in Cyber Security Engineering/ Information Technology program.

About Mason and the CYSE Department:

Mason is world-renowned for its systems approach to cybersecurity, with expertise in critical areas of advanced manufacturing and supply chain security, such as hardware security, cyber-

vulnerabilities research, 5G security, AI-based intrusion detection, autonomous system security, and secure adoption of intelligent technologies. Mason ranked in [the nation's top 10 schools for cybersecurity colleges](#). The expertise of the CYSE faculty is broad and deep. They are leaders in hardware security, digital forensics, cryptography, computer security, privacy, distributed systems, and adaptive cyber defense. Our faculty have years of professional experience and conduct research that provides real-world solutions. For more information, visit <https://cybersecurity.gmu.edu/>.

About the SPIRE Lab: Our research explores security opportunities in emerging computer architecture, examines the weaknesses in autonomous systems, and builds hardware-derived primitives for developing trusted computation frameworks. Our work has been published at flagship venues in hardware design and security, and we have received several recognitions, such as the IEEE TC Featured Paper of the Month in 2022, the Best Paper award at IEEE AsianHOST in 2018, and the Best Paper Nomination in ACM GLSVLSI in 2017. Funding and donations from NSF, NSA, MIPS, NASA-JPL, ARLIS, and Xilinx have supported our research. For more information, visit: <https://tanvirarafin.github.io>

About Fairfax: Fairfax, Virginia, is a charming city known for its high quality of life, making it the [6th best place to live in the United States](#). Located in the heart of Northern Virginia, Fairfax boasts a vibrant community with excellent schools, diverse dining options, and a wealth of cultural and recreational activities. The city's proximity to Washington, D.C., provides residents easy access to many job opportunities and amenities while maintaining a suburban feel. Fairfax is also renowned for its safety. It is [one of the three safest cities in the US](#), and its low crime rates contribute to the peace of mind of its residents. The blend of historic charm, modern conveniences, and its strong sense of community and top-notch public services make Fairfax an ideal place for families, professionals, and singles alike.