Graduate Research Fellow in Hardware Security

Security, Privacy, and Reverse Engineering (SPIRE) Lab
George Mason University, Fairfax, VA

Position Title: Graduate Research Fellow/Assistant in Hardware and Cyber Security
Salary: $35,000 - $42,000 per annum
Benefits: Full tuition and health insurance coverage
Appointment: Full-time
Start Date: August 2024/January 2025
Location: Fairfax, VA 22030
Contact: Dr. Tanvir Arafin (marafin@gmu.edu); Yanze Wu (ywu42@gmu.edu)

We are recruiting two PhD Research Fellow/Assistant(s) in Hardware and Cyber Security positions at the SPIRE Lab at George Mason University. These positions will provide fully funded student support for two PhD students in the lab. You will work on projects in reverse engineering, side-channel, and fault injection attacks on emerging computer architectures using advanced machine learning and cryptographic techniques.

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

Preferred Qualifications:
- Prior experience in reverse engineering, FPGA design, or side-channel analysis using Chipwhisperer.

Application Process:
If interested, please email Professor Arafin (marafin@gmu.edu), including 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 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.