Benjamin Andrew Cyr

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Education

2018 – Now **Ph.D. in Computer Science**
University of Michigan
Ann Arbor, MI

2018 – 2020 **MSE in Computer Science**
University of Michigan
Ann Arbor, MI
GPA: 4.00/4.00

2013 – 2017 **Bachelor's of Electrical Eng.**
Auburn University
Auburn, AL
GPA: 3.98/4.00

Industry Experience

May 2016 – August 2016
ADTRAN Inc. – Huntsville, AL
Network Driver Development
Software development of custom network driver on proprietary ADTRAN equipment.

August 2015 – December 2015
ADTRAN Inc. – Huntsville, AL
Design Verification Testing
Wrote automated "smoke checks" in python to test functionality of new software releases on ADTRAN Management and Switch Modules.

January 2015 – May 2015
ADTRAN Inc. – Huntsville, AL
Sys. Design and Ver. Testing
Cooperative experience. Performed routine tests of ADTRAN and Cisco devices using CLI and proprietary GUIs.

May 2014 – August 2014
SAIC – Huntsville, AL
Private Network Administration
Maintained devices on a private network of helicopter simulators.

Engineering Experience

January 2014 – May 2018
Auburn University – Auburn, AL
AU Small Satellite Program
Member of Electrical Power System Team in student-managed CubeSat program. Managing and teaching a team of younger students to build and test embedded systems.

Research Experience

June 2018 – Now
University of Michigan – Ann Arbor, MI
Cyber-Physical Security Research
Advisor: Dr. Kevin Fu. Researching defenses against light-based attacks on microphones in voice-controllable systems and spoofing attacks on LiDAR sensors used in autonomous vehicles.

January 2018 – May 2018
Auburn University – Auburn, AL
Hardware Security Research
Advisor: Dr. Ujjwal Guin. Proposed a new theoretical defense to prevent firmware extraction attacks in low-cost embedded systems.

August 2017 – May 2018
Auburn University – Auburn, AL
Networking Optimization Research
Advisor: Dr. Yin Sun. Constructed MATLAB simulations for optimizing the age of information in real-time networks.

May 2017 – July 2017
Hochschule Mannheim – Mannheim, Germany
Embedded Systems Research
Advisor: Prof. Dr. Walter Götzmann. Developing a system to measure and display data from an electronic bike using an AVR microcontroller.

Recent Publications

Light Commands: Laser-Based Audio Injection Attacks on Voice-Controllable Systems. T. Sugawara, B. Cyr, S. Rampazzi, D. Genkin, and K. Fu. Usenix 2020.

Adversarial Sensor Attack on LiDAR-based Perception in Autonomous Driving. Y. Cao, C. Xiao, B. Cyr, Y. Zhou, W. Park, S. Rampazzi, Q.A. Chen, K. Fu, Z.M. Mao. ACM CCS 2019.

Low-Cost and Secure Firmware Obfuscation Method for Protecting Electronic Systems from Cloning. B. Cyr, J. Mahmod, U. Guin. IEEE IoT Journal 2019.

Selected Skills

Good level	C, C++, Python, FreeRTOS, Ubuntu, RHEL, Microcontrollers (STM, AVR, NXP, TI)
Intermediate	VHDL, MATLAB, Windows, Soldering, Autodesk EAGLE
Basic level	Java, Verilog, Labview, Microsoft Office, LaTeX