

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. (Computer Option)**
Auburn University
Auburn, AL
GPA: 3.98/4.00

INDUSTRY EXPERIENCE

MAY 2021 – AUGUST 2021
Motional Inc. – Pittsburgh, PA
Cyber Security Engineer
Performed penetration testing of sensors used on prototype autonomous vehicles. Developed initial plans for system-level penetration testing.

JANUARY 2015 – MAY 2015
AUGUST 2015 – DECEMBER 2015
MAY 2016 – AUGUST 2016
ADTRAN Inc. – Huntsville, AL
System Design and Verification Testing
Cooperative experience. Performed routine tests of ADTRAN and Cisco devices using CLI and proprietary GUIs. Wrote automated "smoke checks" in python to test functionality of new software releases on ADTRAN Management and Switch Modules. Software development of custom network driver on proprietary ADTRAN equipment.

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.

SELECTED PUBLICATIONS

Why Lasers Inject Perceived Sound Into MEMS Microphones. B. Cyr, T. Sugawara, and K. Fu. IEEE SENSORS 2021.

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.

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