

Benjamin Andrew Cyr

✉ | 3090 Chelsea Circle
Ann Arbor, MI 48108
☎ | +1 (256) 348-3042
✉ | bencyr39@gmail.com
🌐 | www.benjamin-cyr.com

EDUCATION

2018 – 2023 **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

RESEARCH EXPERIENCE

JUNE 2018 – NOW

University of Michigan – Ann Arbor, MI
Cyber-Physical Security Research
Advisor: Dr. Kevin Fu. Researching defenses against laser and EM-based attacks on MEMS microphones and LiDAR sensors. Physical modeling of photoacoustic and photoelectric effects on sensors.

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 display data from an electronic bike.

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.

INDUSTRY EXPERIENCE

MAY 2022 – AUGUST 2022

Sandia National Labs – Albuquerque, NM
Cyber Security Intern
Improved structure and performance of tools used for malware detection and firmware analysis.

MAY 2021 – AUGUST 2021

Motional Inc. – Pittsburgh, PA
Cyber Security Intern
Performed penetration testing of sensors in prototype autonomous vehicles. Developed testing plans with cyber-physical attack vectors.

JANUARY 2015 – MAY 2015

AUGUST 2015 – DECEMBER 2015

MAY 2016 – AUGUST 2016

ADTRAN Inc. – Huntsville, AL
System Design and Verification Testing
Cooperative experience. Wrote automated "smoke checks" in python to test functionality of new software releases and developed a 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.

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, MATLAB, FreeRTOS, Ubuntu, RHEL, Ghidra, Microcontrollers (STM, AVR, NXP, TI), Embedded Systems Design

INTERMEDIATE Optical Systems, GNU Radio, Soldering, VHDL, Autodesk EAGLE, Windows

BASIC LEVEL Java, Verilog, Labview, Microsoft Office, LaTeX