

Andrew Plotner

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EDUCATION

University of Michigan

Bachelor of Computer Engineering, Minor in Mathematics — 3.98 GPA

Ann Arbor, MI

Aug. 2020 – Present

Notable Classes Taken:

- Introduction to Logic Design (EECS 270)
- Data Structures & Algorithms (EECS 281)
- Introduction to Computer Organization (EECS 370)
- Introduction to Embedded System Design (EECS 373)
- Boundary Value Problems for Partial Differential Equations (MATH 454)
- Numerical Linear Algebra (MATH 571)

Notable Current Classes:

- Introduction to Computer Security (EECS 388)
- Computer Architecture (EECS 470)

Community High School

Diploma

Ann Arbor, MI

Sep. 2016 – June 2020

National AP Scholar Award

EXPERIENCE

FRC Team Programming Lead

Sep. 2018 – June 2020

FRC Team 5708, Zebrotics

- Trained newer team members and ensured tasks were completed on schedule
- Developed a system to stream simultaneous video from four webcams over a low bandwidth connection
- Created a computer vision system from scratch using a Raspberry Pi as a co-processor
- Created and tuned an accurate PID control loop for precise autonomous driving

Patrol Leader

May 2017 – May 2019

Boy Scouts of America Troop 8

- Fully planned several trips, including time control plans, budgets, safety reports, and logistics
- Taught younger members outdoor skills including first aid and backpacking
- Successfully led groups of 3-5 younger members on various high adventure trips across the US

PROJECTS

Etterna | C++, Lua, Git

June 2020 – Present

- Developer of the open source rhythm videogame Etterna (github.com/etternagame/etterna)
- Created 36 merged pull requests, fixing several issues and implementing new features
- Gained experience in reading, understanding, and debugging an incredibly large codebase (over 800 C++ source/header files including nearly 180,000 lines of C++ source code and hundreds of Lua files)
- Gained proficiency in the GitHub fork workflow and the use of feature branches

FRC 5708 Vision | C++, Linux, OpenCV

Sep. 2018 – June 2020

- Made a program that runs on an embedded Raspberry Pi connected to the roboRIO on a FRC robot (github.com/FRC5708/2020-vision)
- Created functionality to read four camera feeds directly using Linux ioctl calls and encode them to H.264 before passing them to a gstreamer pipeline
- Implemented a custom computer-vision implementation using OpenCV that sends the vision data via a custom network protocol to the robot controller
- Designed error-handling code that lets the program gracefully recover from power failure, webcam connection interruption, and network connection loss

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript, HTML

Developer Tools: Git, XCode, VirtualBox, Linux/macOS CLI Usage

Misc: Computer Networking Knowledge, Including Configuration of Cisco Routers and Switches