Mikayla A. Fischler

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Education

Pursuing BS in RBE & CS | Senior (Planned May 2020 Graduation) | Worcester Polytechnic Institute

- Major (double): Robotics Engineering & Computer Science
- GPA: 3.65
- Current Courses: *Foundations of Computer Science, Environmental Biology, Robotic Waste Sorting MQP (Major Qualifying Project, to be completed by graduation)*
- Relevant completed courses: *Accel. Intro. to Program Design, Accel. Object-Oriented Design, Systems Programming, Intro. to Machine Org. and Assembly, Computer Networks, Software Engineering, Operating Systems, Computer Architecture, Discrete Math, Intro. to Digital Circuit Design, Embedded Computing in Eng. Design, Static Systems, Intro. to Robotics, Unified Robotics I (Power Transmission/Object Manipulation), Unified Robotics II (Sensors, Feedback, Decision Processes with the Environment), Unified Robotics III (actuator design, embedded computing, and complex response processes), Unified Robotics IV (navigation, position estimation and communications)*

High School Diploma | 2016 Graduate | Avon High School

- GPA (Weighted): 4.18
- AP Courses: Computer Science, Calculus AB, Psychology, US History
- Member of National Honor Society and Tri-M Music Honor Society

Skills & Abilities

Management & Leadership

- FRC Team 1124 Secretary 2014-2015
- FRC Team 1124 Lead Programmer 2013-2016 (LabVIEW, Java)
- FRC Team 1124 Drive Team Driver 2013-2016

Programming & Computer Science/Engineering

- Experience in: C, C++, Arduino, Java, LabVIEW, PHP, MySQL, JavaScript, HTML, CSS, JSON, XML
- Less Experience in: Python, C#, Racket, MSSQL
- Extensive OS Experience: Debian-based Linux (such as Ubuntu), Windows, Android
- Additional: Multi-Booting, UEFI, MBR, Disk Partitioning, Microsoft Office & LibreOffice, Data Processing/Analyzing, Computer Networking, Closed & Open Loop Control, PID Control, Computer Repair/Disassembly/Assembly/etc.

Awards & Honors

- University of Rochester Xerox Award for Innovation and Information Technology | June 2015
- Saint Michael's College Book Award for Academic Achievement with a Social Conscience | June 2015
- WPI Dean's List Spring 2017, Fall 2017, Spring 2018

Projects

Dorm LEDs | https://ky8.io/dormleds

- Multithreaded LED strip controller for individually addressed LEDs written in C and C++.

- Created circuit for audio input processing with 7 frequency bands in both the left and right channel.
- LED animations include audio EQs, audio pulses, heart-beat pulses (using a pulse sensor), and many non-input-based animations. I will soon be implementing a TFT touch screen for control and configuration.

"SoundCloud" Project | https://ky8.io/lightartsc (source code) https://ky8.io/lightartfp (presentation)

- Audio visualizer created in completion of my Art Practicum (final project for humanities concentration)
- Combination of simple custom circuits and the Teensy Audio Board.
- System controlled by a Teensy 3.6 running Arduino code
- Array of LEDs around a wire mesh/thermoplastic structure covered in cotton balls

FIRST Robotics Competition | https://github.com/frc1124

- I was the primary programmer for my FRC team during my Sophomore, Junior, and Senior years of high school. I participated in the following repositories on the above page: "2014", "2015", "2016" and "2016-Dashboard".
- In 2015, I developed drivetrain stabilization code using a gyroscope, resulting in very high precision control for drivers when traveling side to side using our H-Drive drivetrain.
- I spent many hours developing vision based tracking, and in 2016, our robot made 50 out of 52 shots at the World Championship using purely camera driven targeting. The prior events had similar accuracy.
- I gained extensive experience with PID loops and other variants of closed loop control using cameras, encoders, and gyroscopes.

Relevant Volunteering

Web Developer | Avon High School National Honor Society | June 2015 – Present (maintenance)

- Re-designed and re-implemented an online system for applying to and reviewing NHS applications at my high school.
- I implemented an improved UI, much better security, improved error handling, and new, advanced features for administration.

Relevant Work Experience

Robotics/STEM Facilitator | Boys and Girls Club of Hartford | July 2014 – August 2014

- Taught young kids (~late elementary, early middle school) on the basics of FIRST Lego League.
- Introduced them to designing, building, and programming Lego robots.

Intern | Reality Interactive | June 2015 – August 2015 & June 2016 – August 2016

- Basic intern tasks including some computer repair. Primarily learned how a workplace usually works.
- My next year, I worked with Excel and a basic web app using HTML and JavaScript.
- I also developed a web based tool for inventorying using PHP, cURL, and MSSQL.

IT Intern | The MDC | June 2017 – August 2017

- I worked with and learned about advanced networking, virtual machines, Microsoft Active Directory and wrote scripts written in PowerShell and Python.

Developer | WPI Academic Research and Computing | April 2018 – Present

- I am currently developing a online advanced rapid prototyping order interface using PHP, JSON, HTML, CSS, MySQL, and JavaScript. This site has the added complexity of needing CMS-style form creation and editing, which requires dynamically generated JavaScript from a simple JSON file.