

David Macpherson

EXPERIENCE

FIRST Robotics, Academies of Loudoun — *Software Developer*

NOVEMBER 2023 - PRESENT

I develop & prototype software for our school's robotics team. Secondary duties include wiring, soldering, and 3d-modeling robot parts, in addition to programming the robot in order to make it functional during competitions.

Web Developer, Freelance

AUGUST 2021 - PRESENT

Identified an administrative problem at my school and made a website to address said problem, the website now has over 2.1k monthly active users, and has been officially endorsed by my school.

PROJECTS

> MiniLoco

In order to guarantee my admission into my school's local robotics team, I prototyped, designed, 3d-printed, wired, and programmed a fully functional miniature robot in the span of 2 days.

> Projectile Motion Simulation

Designed an interface that allows fine-grained control over all aspects of projectile motion. Every derivative of position, up to the 100th derivative, is implemented. This allows for intricate simulation, testing, and experimentation in a convenient setting. Created using Svelte, Typescript, and Github Pages, and implemented over the course of a day.

> MNIST Digit Recognition in Voxel Engine

Trained neural network with Tensorflow to be able to recognize handwritten digits using the MNIST dataset. To prove my understanding of the concepts, I implemented the full network into the voxel-based game *Minecraft*. This was not trivial, as this is not an environment that is well-suited for the mathematics that neural networks require.

More projects listed at <https://github.com/ironon/projects>

SKILLS

R Statistics

Data Science with Python

Leadership

Embedded Systems Design

HTML5

Java

AI/ML

Advanced Mathematics

Computer Simulation

EDUCATION

Academies of Loudoun, Leesburg— *Student*

AUGUST 2023 - PRESENT

I was admitted into a selective STEM magnet school, with my specific course teaching me about hardware engineering.

Tuscarora High School, Leesburg— *Student*

AUGUST 2021 - PRESENT

Along with being dual-enrolled in the Academies, I attend another school for learning non-STEM subjects.

CONTACT

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