

Carwyn Collinsworth

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Education - **Stony Brook University, Computer Science Honors** | **GPA: 3.77** | **Specialization in AI**
- **Monroe Community College, includes solely MTH courses, taken during High School**

- MTH-212 - Calculus III
- MTH-220 - Discrete Mathematics
- MTH 225 - Differential Equations
- MTH-230 - Linear Algebra
- AMS 301 - Finite Math. Structures
- AMS 310 - Prob. and Statistics
- CSE 214 - Data Structures
- CSE 220 - Systems Fundamentals
- CSE 316 - Software Development
- CSE 332 - Visualization
- CSE 353 - Machine Learning
- CSE 385 - Analysis of Algorithms

Experience

Laboratory of Laser Energetics Summer Internship 2017 - 2019

Coded real time MATLAB programs which integrated a x-ray camera and low temperature control to expedite the fill and freeze process of liquid-DT capsules in fusion experiments. This experience taught me about control systems and PID loops; see more at my website.

Inverted Linear Pendulum 2018

Implemented a real-time control system with an Arduino to balance a rod fixed in one dimension using a stepper motor, angle encoder, and limit switches. Code, videos, and further explanation can be procured via my portfolio website linked below.

Electric Longboard 2017

Built a longboard, complete with components including a brushless motor, VESC, four three-cell high discharge lipo batteries, and a receiver. I used Android Studio to program an application to control the speed and reverse functions wirelessly using bluetooth.

Orolia - Machine Learning Internship 2020

Spoofed or jammed satellite signal detection implemented in MATLAB - later in C++ using MATLAB Coder. A LSTM recurrent neural network was implemented, and data was passed in first as a batch, and then later through buffering. Data preprocessing was also involved.

CSE 495, 496 - Senior Honors Research Project 2020 - Current

In progress. In-browser drone simulation with reinforcement learning taught drone to hover and dodge obstacles. UE4 simulation in 3D as well as flight controller interfacing is the current task. Then (Spring 2022) a physical drone will be constructed to dodge projectiles.

Core Competencies

- Java, Python
- C, C++
- Javascript, React
- Express, Axios, MongoDB
- Machine Learning
- Data Science

Honors and Awards

- Stony Brook University Presidential Scholarship
- Stony Brook University Computer Science Honors Program
- Member of Tau Beta Pi
- Stony Brook University Dean's List

[LinkedIn](#)

[Personal Website](#)

[GitHub](#)