

# Sam Belliveau

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## EDUCATION

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### Cornell University

*Bachelor of Engineering in Electrical Computer Engineering*

Ithaca, NY

Aug. 2022 – May 2026

### Stuyvesant High School

*Regents Diploma with Advanced Designation with Honors*

New York, NY

Sept. 2018 – Jun. 2022

## TECHNICAL SKILLS

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**Languages:** C / C++, Python, Java, Rust, Swift, Go, JavaScript, Verilog HDL, SQL, HTML, GLSL, Bash / ZSH

**Technologies:** Git, Linux, Docker, VS Code, Robot OS (ROS), Cassandra, BigQuery, Numpy, Scipy, PyTorch

## EXPERIENCE

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### Undergraduate Researcher

*Abe Davis's Group @ Cornell University*

June 2024 – Present

Ithaca, NY

- Refactored ReCapture application to use modern SwiftUI frameworks & coding practices
- Built robust framework for storing image metadata in ReCapture to allow for easy retrieval

### Robotics Software Engineer

*Cornell University Autonomous Underwater Vehicles*

November 2023 – Present

Ithaca, NY

- Implemented high performance Kalman Filtering using Nvidia's CUDA framework for submarine localization
- Implemented least squares optimization to determine thruster speeds for desired submarine movement

### Signal Analysis Intern

*Feinstein Institute for Medical Research*

January 2023 – May 2023

Manhasset, NY

- Automated Sharp Wave Ripple (SWR) detection using Python and SciPy to analyze EEG data
- SWR's are used to predict the onset of seizures, and potentially play a pivotal role in memory formation

### VEX Robotics Tutor / Coach

*PLAYIDEAs NY*

October 2022 – May 2023

Great Neck, NY

- Coached a local High School VEX Robotics Team #99588, Checkmate Robotics
- Used my experience with robot control theory like PID and Odometry to help teach and advance the team

### Software Intern on Consumer Product Team

*Reddit Inc.*

July 2022 – September 2022

Remote

- Worked with Taxonomy Group which was responsible for managing statistics in order to classify subreddits
- Developed a script that created realistic synthetic data in order to test the accuracy of the ML models
- Added more detailed statistics pertaining to each subreddit, allowing them to be reviewed more quickly

### Software Intern on Consumer Product Team

*Reddit Inc.*

July 2021 – September 2021

Remote

- Created comprehensive unit tests to catch bugs before deploying to production
- Worked with tools such as BigQuery and Cassandra to send notifications reminding moderators to fill out surveys

## PROJECTS

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### Dolphin Emulator | C++, GLSL, JIT Recompilation, Hardware Hacking

September 2022 – Present

- Improved emulation performance for low-end devices through dynamically modifying video interrupt timings
- Introduced mathematically accurate and comprehensive resolution scaling for improved image quality

### Flying Dutchman | Rust, Min Max, Alpha Beta Pruning, Chess

June 2023 – July 2023

- Developed a Chess Engine in Rust that achieved an Elo of 2700
- Familiarized myself with Rust & Alpha Beta Pruning in order to optimize the engine