

Jacob Waters

Computer Science B.S.

Experience

- **Avionics Developer – Beach Launch Team Liquid Rocketry – Summer 2021 - Current**

Developed software for inflight data compression. The key feature implemented was a technique called bit-packing, as well as the flexibility to be used with any packet format. Applications include packing 8 Booleans per byte, and integers with custom bit-widths other than 8, 16, or 32. I also setup a remote development SSH server allowing remote programming of embedded development devices.

- **Tutor and Curriculum Design – Monterey Peninsula College – Fall 2021 Semester**

Guided students to complete an embedded development project based on a template I designed. With my guidance they built a Coffee-Alarm prototype, a device which notifies you when your drink is the perfect temperature. I designed the Coffee-Alarm to create a project which is at once fun, practical, and doable for a beginner CS/EE students. It was both rewarding and challenging to learn when to help and when to let them struggle, and also how to tune difficulty for a diverse range of student's abilities and personalities.

- **Computer Vision Research – California State University Long Beach – Summer 2018**

Learned 3D printing and CAD with Fusion 360 and OpenSCAD and leveraged those skills to design and print cases to hold and connect the parts of our in-house built vision robot. In addition to designing electronics cases, I helped my Principal Investigator debug electrical/software bugs with our sensors.

- **Computer Vision Internship – Naval Postgraduate School – Summer 2017**

Worked with a researcher at NPS to configure ORBSLAM2, an open-source SLAM algorithm. I learned about how to operate the Linux shell, about point-clouds, and the challenges they pose to practical computer vision applications.

Projects

- **Light-Based Alarm Clock - Arduino C++ - 2019**

Designed an RGB alarm clock which simulates a sunrise at a time defined by the user. By using a simulated sunrise in conjunction with a traditional alarm clock, it can help a person wake up more naturally. I learned UI and product Design while leveraging existing C++ and electronics skills to make a product which can both increase the productivity and comfort of the user.

- **Racing Game - Java - 2017**

Implemented Linear Algebra and Calculus skills to build a polynomial spline generator which made levels for a racing game. It was a large-scale programs with dozens of Classes and a hundred of pages of code.

Education

Bachelor of Science – Computer Science – California State University Long Beach – May 2022

Programming Languages

- Java
- C++
- SQL
- Python

Have Built Original

- Linear Algebra Formulas
- Calculus Formulas
- Novel Algorithms
- Large Scale Programs

Professional Qualities

- Honest and Hardworking
- Open to Criticism
- Adaptable and Determined
- Kind and Friendly