Key Talents:

Hardworking

Honest

Kind

Visionary

Calculus

Linear Algebra

Algorithms

Creativity – new Algorithms and Formulas

Hardware Design

3D Printing

CAD

Software Architecture

Beach Launch Team - Avionics Developer June 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 type.

Configured and ran Linux-based SSH server allowing remote access to embedded hardware. I also developed a custom protocol to organize the transmission of sensor data including a variable length id and data fields to fit dynamic sized data.

SSH Keys Bash Script - May 2022

Wrote a bash script which automates the process of adding SSH Keys to a remote host, reducing the time required to setup new servers. A simple but practical piece of code.

**Personal Work**

STEM tutor and Curriculum Design - Monterey Peninsula College Aug 2021 - Dec 2021

Guided students in an Engineering lab to complete an embedded development project based on a template I designed. With my guidance they built a Coffee-Alarm prototype, a device which notified you when your drink was the perfect temperature.

* **Portable Camping Battery - Summer 2020**

Used Fusion 360 to design and 3D print a custom interface to a 36V lithium battery and designed circuitry to interface with 12V outlet. Since there are dozens of accessories already available for car 12V outlets, it’s trivial once you have 12V to use an inverter to run wall-plug appliances like computer chargers, lights, televisions, etc.

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

Fully 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 help myself wake up without daily jet-lag.

Computer Vision Research Opportunity, CSULB June 2018 - Aug 2018

During this opportunity I learned the basics of 3D printing and CAD, and leveraged those skills to design cases to hold and connect the parts of our in-house built vision robot.

Beat Saber Song Converter 2020

Wrote a Java program to parse Beat Saber Custom Levels and convert them into a format natively compatible with the Beat Saber app, removing the need for a Mod Manager to play custom levels.

NPS Computer Vision Internship

Java Game - 2017

Worked on a Java racing game, which featured an algorithm that could take an array of points and output a polynomial that fit those points. Using this technique, I built levels as polynomial splines. My other relevant accomplishment was the development of a formula which enabled an O(n) algorithm to find the intersection of a circle with an arbitrary sized polynomial.

**Significant skills**

Linux Server Configuration: Installation, bash & scripting, partition management

CAD - With fusion 360 and openSCAD, with sufficient skills to make electronics cases

Programming: Java, C++, SQL, and Python. Strong Algorithms and Data Structures Ability

EE Prototyping: Good soldering skills, fundamentals of EE such as capacitors, resistors, diodes, wattage, etc

Mathematics: Strong Linear Algebra and ML Conceptuals, Strong Calculus Skills, Can invent new math

Creativity: Not afraid to develop novel equations and algorithms to solve problems

Code Hygienics: I write clean code with descriptive variable names. I spend more time designing software architectures so the final product is robust and easy to use. I believe code is art and should be a pleasure to use.

Social: Great Teacher and Mentor, easygoing and kind, willing to admit mistakes, happy to learn and accept criticism, determined and competent