Jacob Waters

I thrive on tackling complex technical challenges and finding innovative solutions. I have an incredible intuition for math and algorithms and a mind that constantly churns new ideas. I yearn for a fast-paced environment with a talented team to learn from and grow with. Lets push the boundaries of what’s possible together.

**Experience**

**Software Engineer – Applied Materials – July 2022 – Current**

* **Architected Reusable Python GUI Framework:** Developed an extensible Python GUI platform with custom widgets tailored to the semiconductor field, enabling reusability, scalability and efficiency.
* **Designed Custom API:** Designed a robust C++ interface to abstract away complex legacy assembly code and built a Python API on top to optimize performance, ease-of-use, and code complexity.
* **Project Managment:** Currently driving project progression with determination, resourcefulness, and effective communication across various stakeholders and engineering disciplines.

**Avionics Developer – Beach Launch Team Liquid Rocketry – Summer 2021 – Summer 2022**

* Enhanced rocket logging rate by developing an Embedded C++ software library for efficient inflight data compression via Bit-Packing
* **Won** ***Most Innovative*** senior project and $1000 for team as main presenter at Senior Expo
* **Linux Bash skills** enabled rapid remote development with an **SSH server** for avionics testing

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

* **Developed curriculum** for STEM students prioritizing rigor, accessibility, and engagement
* **Designed a prototype** which notifies you when your drink is the perfect temperature
* **Mentored students** on coding and circuit design while teaching foundational concepts

**Projects**

**Convolutional Neural Network - Python - 2022**

* Designed a 10-class image recognition classifier with a 96.5% validation accuracy using **Keras**
* Configured a local Linux installation to run **TensorFlow GPU** via locally hosted **Jupyter Notebook**
* Used a **Docker Container** to manage TensorFlow, Python, and Jupyter dependencies

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

* **Designed an RGB alarm clock** prototype which simulates a sunrise at a time defined by the user
* **Designed a remote** for controlling the RGB Led strip with a remote-locating mode
* Used **MOSFET’s** and **DC Power Supplies**, **diodes**, **CAD**, and **soldering**

**Racing Game - Java - 2017**

* **Designed a large-scale program** with dozens of Classes and over 100 pages of code
* Implemented **Calculus** and **Linear Algebra** skills to build a **spline generator** for easy level generation
* Developed a **novel equation & algorithm** to intersect a moving circle with a polynomial in O(n) time

**Education**

* Bachelor of Science in Computer Science – C.S.U. Long Beach – GPA 3.66 – May 2022

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| **Skills** | | **Original Works** | **Professional Qualities** |
| * Python * SQL * C++ | * TensorFlow * Java * Bash | * Mathematical Formulas * Novel Algorithms * Large Scale Programs | * Honest and Friendly * Adaptable and Determined * Open to Criticism |