Blake Masters

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Education

California Polytechnic State University — San Luis Obispo, CA
B.S. in Engineering — *Aug. 2021 – Jun. 2025*
Minors in Computer Science & Physics (optics)
Capstone Project: Analysis of proteins from Cell Types/Promoters/Sequence Mutations in a deep learning model.

Experience

Software Engineering Intern — Jun. 2024 – Sep. 2024
Alef Aeronautics — *San Mateo, CA*

- Designed and developed a fan controls dashboard using a React frontend, C++ with Qt backend, and TensorFlow AI-driven Auto Fan Mode, improving user interaction and system monitoring capabilities for electric vehicles.
- Implemented real-time data visualization in the React frontend using Chart.js, displaying dynamic charts of cabin temperature and fan speed, enhancing the diagnostic and control efficiency of the system.
- Optimized backend communication in the C++/Qt module, ensuring low-latency interaction between the React GUI, vehicle fans, and temperature sensors, providing responsive manual and automatic controls.
- Developed and integrated an AI-driven Auto Fan Mode powered by TensorFlow, which uses predictive analytics to automatically regulate fan speed and airflow direction, maintaining optimal cabin temperature based on real-time environmental data and user preferences.

Mechatronics Intern — Jun. 2023 – Sep. 2023
Alef Aeronautics — *Santa Clara, CA*

- Developed and implemented prototype controls for acceleration and steering by creating custom programs for interpreting data from potentiometers.
- Developed a UI/UX reference design for a dashboard using PyQt. Dashboard includes class based layering of objects and sub-components inspired by html design.
- Startup background encompassing proficiency in SOLIDWORKS, 3D printing, precision tolerance calibration, and the design of wiring harnesses/receivers for flight/ground control systems.

Design Engineer Intern — Jun. 2022 – Jul. 2022
Strahs Consulting LLC — *Belmont, CA*

- Team-designed prototype tesla turbines for fuel efficiency in the transport industry.
- Conducted preliminary evaluations for necessity and potential success of products in various environments and industries.
- Executed concept validation through mathematical modeling and simulations using MATLAB and Python, optimizing turbine performance.

Technical Skills

Languages: Python, C, C++, Java, Arduino, R
Frameworks/Libraries: TensorFlow, pytest, pandas, Numpy, Swing, Flask, Qt, React
Common Software: MATLAB / Simulink, SOLIDWORKS, Verilog, AutoCAD, ROS
Additional Tooling: Saws, Lathe, CNC Mill, Drill/Hole sizing and callouts, Engineering Safety

Off the Job

Personal Projects — Current
Cal Poly — *San Luis Obispo, CA*

- CT-image processing through a Radon transformation. Intends to present the reconstruction through a sequential model.
- sci-kit-learn moons dataset tests.

Robotics (Autonomous Vessel) — 2023
Cal Poly — *San Luis Obispo, CA*

- Implemented communication protocols for LiDAR data transmission using a Raspberry Pi, sizing transmission data as necessary.

Class on Grass FC — Present
Midfielder