LAUREN JONES

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EDUCATION

CALIFORNIA POLYTECHNIC UNIVERSITY, SAN LUIS OBISPO, CA **AUG 2022–PRESENT**
Bachelor of Science, Computer Engineering.

- Data Structures, Digital Design, Object-Oriented Programming, Computer Design & Assembly

ST. FRANCIS HIGH SCHOOL, SACRAMENTO, CA **AUG 2018–MAY 2022**

EXPERIENCE

CAL POLY RACING BAJA SAE **SEP 2022–PRESENT**
Electronics Lead ***JUNE 2023–PRESENT***

- Designed two PCBs in Altium for the 2024 car: Semi-Active Suspension Controller and Radio.
  - Semi-Active Suspension PCB features a STM32 microcontroller that drives 4 solenoid valves by providing a range of PWM values.
  - Radio PCB that facilitates wireless data communication between the car and home pit and features an Xbee, STM32, and 12V to 3V3 buck controller.
- Developed two schematics for the motherboard PCB.
  - 12V to 5V buck controller schematic for the car's powerboard PCB.
  - Solenoid driver schematic that features overcurrent protection for the car's backplane PCB.
- Created an Xbee network and antenna architecture for a wireless data acquisition system to communicate from the car to home pit with an approximate range of 2 miles.
  - Implemented an XBee network that forwards a data packet, in C++, from a Data Aquisition PCB (DAQ) to an STM32 to an XBee network.
  - Built a frontend GUI in Python to display live sensor data; reads serial from an Xbee in the backend.

Electronics Member ***SEP 2022–JUNE 2023***

- Designed a live webserver; Created an Xbee network architecture for wireless data communication.
- Developed software in C++ for various car projects: lookup tables for the transmission and sensor integration.

***GENESEAS* ROBOTICS** **AUG 2019–JULY 2022**
Software Lead and CMO

- Developed a Remotely Operated Vehicle (ROV) designed to perform a variety of marine sustainability tasks through MATE Robotics. *Geneseas* placed 4th overall at the MATE ROV World Championships.
- Created a new system of power-limiting algorithms in C++ that control the parameters of thruster outputs.
- Built a GUI in Python with full software control of vision and image and live video recognition systems.
- Designed an array of marketing posters and a 25-page technical report using Adobe InDesign. *Geneseas'* Marketing Display placed 1st at the World Championships and was published in the Journal of Ocean Technology.

AEROSPACE MUSEUM OF CALIFORNIA **JUNE 2022–AUG 2023**
STEM Summer Camp Counselor

- Taught STEM curriculum in three disciplines: Aviation, Space, and Engineering to over 625 students.

SECURE AUTOMOTIVE CONTROL FIRMWARE, MIT **JULY 2021**

- Developed firmware and bootloader updates encrypted by AES-128 GCM and HMAC SHA-256.
  - Firmware defends against Man in the Middle attacks, buffer overflows, cryptographic signature attacks, and flash memory read attacks.

SKILLS

- Programming Experience: C++, Python, C, HTML, CSS, Javascript.
- Cisco Networking Certifications: Cybersecurity Essentials, Introduction to Cybersecurity, Introduction to Packet Tracer, Linux Unhatched.
- Technical Skills: Cybersecurity, Cryptography, Network Security, Arduino, Git, Altium PCB Design, Circuit Design.