Evan Lee | github.com/Eclypsee | linkedin.com/in/evan-l-0186302ab

EDUCATION

California Polytechnic State University

- *Computer Engineering: GPA: 3.797, 2023-2026*
- *Member of IEEE Eta Kappa Nu and Tau Beta Pi*

EXPERIENCE

Frontend and Integration Lead for CodeDay.io

- **Tools used: Javascript, React.js, Pinecone, Vercel, OpenAI API, Fly.io**
- Developed and optimized a custom AI model using Pinecone databases for real-time debugging assistance, improving code error detection accuracy by 15%.
- Collaborated with a diverse engineering team to build a responsive React.js frontend for a web-based debugging platform.
- Integrated and deployed the application on Fly.io, ensuring high availability and continuous uptime.
- Partnered with **CodeDay**, **serving over 70,000 users**, to deliver accessible AI-powered debugging tools, reducing student error-resolution time.

Low-Cost GNSS Tide Gauge Researcher, collaborated with Dr. Stefan Talke and Dr. Serena Lee

- **Skills used: FreeRTOS, PPP GNSS, STM32, XE125, ZED-F9P, BLE, nRF52840, ESP32**
- Developed a low-power, self-surveying GNSS tide gauge for oceanographic research.
- Integrated XE125 radar for robust gauging and implemented BLE-based file transfer for field efficiency.
- Engineered an ExFAT SD card system to replace Fat32, improving read/write performance by 10×.
- Designed and fabricated a custom PCB integrating ESP32, STM32 (USB-to-Serial), ZED GNSS module, RTC, and solar charging circuit using LDO regulators.
- Deployed Precise Point Positioning (PPP) for centimeter-level tide measurements.

Convolutional Neural Network Developer for Inspirit AI

- **Tools used: Python, Sklearn, Tensorflow, Seaborn**
- Led a team of engineers in developing computer vision software to detect pneumonia from X-ray images.
- Spearheaded the computer vision effort, utilizing TensorFlow and Sklearn to train and deploy a Convolutional Neural Network achieving 90.8% accuracy in pneumonia detection.
- Collaborated cross-functionally to create and present a comprehensive report showcasing the project's success.

Underwater Robotics Embedded Systems Engineer for CalPoly UROV

- **Tools used: STM32, C, Blue Robotics ESC, USART, Fusion 360**
- Developed Thrust Vectoring code using a Moore Penrose pseudo-inverse algorithm for a fully vectored underwater craft.
- Developed a CMSIS-based PWM driver for STM32F439ZI to control ESCs with 50 Hz signals.

PROJECTS

RISC-V MCU on Artix 7 FPGA board

- **Tools used: System Verilog, Basys3 Artix-7 FPGA, Xilinx Vivado, RISC-V Assembly**
- Developing a RISC-V MCU on an Artix-7 Basys3 board using Xilinx Vivado for simulation and synthesis.
- Implemented core components including ALU, registers, memory, control unit, and branch condition generator.
- Integrated a custom CSR for Interrupt Service Routine handling.
- Designed and tested data paths for fetch, decode, execution, memory access, and write-back stages.

Snake Game in RISC-V Assembly

- **Tools used: System Verilog, Basys3 Artix-7 FPGA, Xilinx Vivado, RISC-V Assembly**
- Developed the game snake in a Basys3 FPGA board that displays to a VGA capable display
- Designed the game entirely in RISC-V Assembly utilizing the MMIO system for display, an Interrupt Service Routine for button presses, and a VGA driver that reads from MMIO.

TECHNICAL SKILLS

Python, Tensorflow, Seaborn, Sklearn, Solidworks, Java, Javascript, HTML, CSS, Soldering, Onshape, Git, FPGA programming, Pinecone Vector Databases, Vercel, Fly.io, React.js, RISC-V, System Verilog, C, STM32