

Martha-Victoria Parizot

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EDUCATION

Harvey Mudd College, *Claremont, CA*

May 2025

Bachelor of Science in Engineering (Electrical)

Tau Beta Pi Honors Society, Dean's List; GPA: 3.85

SKILLS

Programming: C/C++, SystemVerilog, Python, SEGGER, Lattice Radiant

Design & Analysis: MATLAB, LTSpice, ModelSim, KiCAD, SolidWorks, Git/GitHub

Lab & Machining: Oscilloscope, SMT Soldering, Logic Analyzer, Power Analyzer, Mill, Lathe, Laser cutting, 3D Printing

RELEVANT PROJECTS

Two-Channel DJ Mixer, <https://projectparivo.github.io/ProjectParivoPortfolio/> October 2024 - December 2024

- Built a DJ mixer in Verilog and C that manipulates the frequency and gain of stereo AUX audio based on user input.
- Implemented real-time audio pipeline using Inter-IC Sound (I2S) communication and Direct Memory Access (DMA) to stream data from external ADC through an FPGA to an STM32 Microcontroller and DAC while satisfying Nyquist sampling criteria.
- Achieved audio filtering using Finite Impulse Response (FIR) filters in MATLAB and RC low-/high-pass filters in hardware.
- Tested and debugged audio and serial interfaces using logic analyzer, oscilloscope, and ModelSim.

Temperature Webserver, <https://vparizot.github.io/IoTProject/> November 2024

- Developed an Internet of Things (IoT) temperature monitoring device interfacing a microcontroller with a ESP8266 WiFi Transceiver over UART and a digital thermometer over SPI, written in C using CMSIS headers in Segger IDE.
- Created a web interface to display real-time temperature data and allow users to control sensor resolution.

Keypad Scanner, <https://vparizot.github.io/FSMProject/> September 2024

- Designed a finite-state machine (FSM) to scan and debounce a 4×4 matrix keypad and drive dual multiplexed seven-segment displays, implemented on an FPGA using SystemVerilog and verified in ModelSim.

EXPERIENCES

Electrical Engineer, Mainstream Engineering, Rockledge, FL June 2025 - Present

- Architecting the embedded software for a distributed 6-node cooling system on MCU-based control boards, defining interactions between peripherals, control logic, and networking stacks (LwIP over UDP/Ethernet).
- Prototyping fault-tolerant leader election algorithms (Ring, Bully) via UDP in Python and C to test different failure conditions to ensure uninterrupted system control and handoffs.
- Leading technical software design reviews, presenting architecture with block diagrams and implementing feedback
- Working with vendors to custom sensors and component selection
- Applying DO-178C software standard, including authoring software plans, requirements, and traceability documentation.

Software Team Lead, Technical University of Denmark/Heriot-Watt University, Claremont, CA August 2024 - May 2025

- Built data acquisition system and op-amp circuits for current, wind speed, and direction sensors with Teensy and MATLAB.

Hardware Intern, Volley Automation, South San Francisco, CA May 2024 - August 2024

- Modeled and presented short- and long-term strategies for retrofitting automated EV charging in parking garages to senior engineers; built SolidWorks prototypes with 3D-printed validation models.

Research Engineer, Origin Materials Clinic Team, Claremont, CA January 2024 - May 2024

- Met with recycling specialists and ran composition analysis on PET plastic bales to quantify and validate product's necessity.
- Delivered data-driven presentations to 20+ Pepsi clients on Origin's value proposition and provided design recommendations.

Differential Privacy Researcher, Rutgers University, NJ & Charles University, Prague May 2023 - August 2023

- Created Python framework to generate differentially private scatterplots based on user-chosen parameters and datasets.
- Analyzed the post-processing impact on visual utility and selected to present research to ~100 peers at international workshop.

Software Engineering Intern, TokenWorks Inc, Bronxville, NY June 2022 - August 2022

- Developed a subscription portal GUI for users to buy and manage credits to perform different ID authentications.

LEADERSHIP/TEACHING

West Dorm President, HMC, Claremont, CA August 2022 - May 2025

- Elected to represent a dorm of 88 people, including allocating the budget and working with deans to plan events.

Machine Shop Proctor, HMC, Claremont, CA January 2023 - May 2025

- Taught students (100+) to safely use metal and woodshop tools, instructed them on proper machining processes and tolerances.

Data Structures & Program Development Tutor/Grader, HMC, Claremont, CA January 2023 - May 2025