

# Brian Pham

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## Education

### California State University, Long Beach | Long Beach, CA

Bachelor of Science in Electrical Engineering, DSP/Communications Emphasis, GPA: 3.94

August 2022 – December 2024

### Golden West College | Huntington Beach, CA

Associate of Arts in Computer Science and Technology, Mathematics, and Science, GPA: 4.00

June 2020 – May 2022

## Skills

**Languages:** MATLAB, VHDL, C++, Python, ARM Assembly, HTML, CSS

**Software:** Simulink, Xilinx Vivado, System Generator, Vitis Model Composer, Keil  $\mu$ Vision, NI Multisim, AutoCAD, Microsoft Visual Studio/Code, Microsoft Office Suite

**Certifications:** Machine Learning Onramp, Learning FPGA Development

**Organizations:** CSULB Institute of Electrical and Electronics Engineers Student Chapter, Society of Asian Scientists and Engineers

## Experience

### CSULB Multi-disciplinary Neural Networks and DSP Lab | Long Beach, CA

Research Assistant

November 2023 – Present

- Conducted research on hall sensor characteristics and applications for speed and position capturing in a motor.
- Analyzed and worked on Simulink models for BLDC motor scope outputs and commutation logic.
- Attended weekly meetings for the research group to discuss and present progress reports.

### CSULB Electrical Engineering Department – Electric Circuits Lab | Long Beach, CA

Instructional Student Assistant

February 2024 – May 2024

- Guided students through the design of electric circuits and the use of lab equipment such as DC power supplies, function generators, digital multimeters, and oscilloscopes.
- Explained theoretical concepts for the different techniques used for linear circuit and transient analysis.
- Proctored quizzes and did preparation for the lab experiments.

### CSULB Electrical Engineering Department – Microprocessor Principles | Long Beach, CA

Teaching Assistant

August 2023 – December 2023

- Instructed students through the installation of Keil  $\mu$ Vision software and resolved technical issues.
- Discussed assembly language code concepts and topics to students and aided students with debugging code.
- Graded lab assignments, quizzes, midterm, final, and held review sessions for the quizzes and midterm.

## Projects

### MAC Based FIR Filter | DSP for Multimedia Communications

February 2024 – April 2024

- Realized a MAC based FIR filter using Simulink and System Generator to generate VHDL code used in Xilinx Vivado and implemented on a Basys 3 FPGA board which was tested through JTAG hardware co-simulation.
- Assembled and configured subsystems using the Xilinx block set for the control logic to control the storage of samples and coefficients and the memory to store the data using dual-port RAM.
- Created logic blocks for padding and unpadding data to force the conversion of data types, reinterpret unsigned or signed data, combine buses, and extract certain bits of data.

### Digital Lock System | Digital System Design

April 2023

- Designed and implemented a digital lock module through Xilinx Vivado and VHDL code on a Nexys 4 DDR FPGA board, utilizing buttons and LED lights on the board to verify the inputs and outputs.
- Developed a Moore type state diagram to describe the behavior of the lock and analyzed simulation waveforms of test bench code to verify the results of the system.
- Incorporated a debouncing module to prevent mechanical debouncing input errors when the input buttons on the FPGA board are used.

## Relevant Coursework

**Completed:** Digital Logic Design, Electric Circuits, Digital System Design, Analog Electronics I, Microprocessor Principles, Electromagnetic Fields, Control Systems, Probability and Statistics, Communication Systems I, Digital Signal Processing, DSP for Multimedia Communications

**In Progress:** Analog Electronics II, Communication Systems II, Digital Filter Design and Audio Processing, DSP Design, EE Design