

Bryce Tobiano

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SKILLS: C++, Java, React.js, Express.js, JavaScript, HTML, CSS, Python, MATLAB, Git, Verilog, VerilogHDL

EDUCATION

U.S. Citizen

University of Southern California, Viterbi School of Engineering

Los Angeles, CA

BS in Computer Engineering and Computer Science

Expected May 2026

GPA: 3.86/4.00

- Organizations: HackSC, Christian Students at USC, Society of Asian Engineers and Scientists,
- Relevant Coursework: Algorithms, Data Structures, Distributed Systems for IoT, SoC, MOS VLSI

EXPERIENCE

Hibiscus - HackSC

Los Angeles, CA

Software Engineer

September 2022–Present

- Led team of four developers to develop Hibiscus, an all-in-one, plug-and-play hackathon platform, used by 800+ users using **Next.JS**, **React**, **Node.JS**, **Express.js**, and **Supabase**.
- Deployed a Supabase backend which tracks user status, event participation, and other statistics.
- Redesigned and refactored NextJS frontend pages for events, sponsors, and judging utilizing.

Evidant Corporation

Laguna Hills, CA

Software Engineer and Data Science Intern

May 2023–July 2023

- Collaborated with a team of 6 engineers to implement **Angular** components and revamped **C#** backend to create a dashboard allowing analysts to manipulate data using custom functions through a **data transformer**.
- Established **data frame** and **pivot table** processing within Angular components by building upon Python pandas library for improved speed and parsing capabilities.
- Improved data processing by a factor of 25% from ~2secs to ~1.5secs per 10,000 lines through optimized function calls and implementing multiprocessing capabilities.

John O'Connor Nanofabrication Laboratory

Los Angeles, CA

Cleanroom Fabrication Intern

May 2024–August 2024

- Optimized fabrication process of **memristors** through testing a variety developing and lift off chemicals resulting in 25% more yield and a 50% increase in durability.
- Handled cleanroom tools such as RIE80 Oxford Etcher, Lithographers, EBeam Evaporators, Sputtering.

USC Viterbi School of Engineering

Los Angeles, CA

EE250 Course Producer (Distributed Systems and the Internet of Things)

July 2024–Present

- Revamped weekly labs and held weekly office hours on various Systems and IoT topics and protocols using tools including TiG IoT monitoring, MQTT, Cloud Computing AI, TCP, UDP, and PCB Design.

PROJECTS

Convolutional Neural Network on an FPGA - EE454 System-on-Chip

November 2024

- Synthesized a **Verilog** implementation of a Convolutional Neural Network onto a **Altera DE2-115 FPGA** to identify features handwritten digits (MNIST dataset), achieving **85% accuracy**.
- Optimized computational resources to fit CNN architecture within FPGA constraints, achieving efficient data flow and resource management.

Systolic Array Chip Design - EE477 MOS VLSI

November 2024

- Constructed transistor-level layout of a systolic array via **Cadence Virtuoso** for compute-heavy tasks such as deep learning and matrix multiplication.
- Improved power consumption by 35%, area by 25%, and performance by 35% using iterative design strategies.

Firing Frenzy - EE354 Digital Circuits

May 2024

- Implemented a target practice game in **Verilog** for **Digilent Nexys 4 FPGA**.
- Retrieved **3-axis accelerometer** data via **SPI protocol** and interfaced with **VGA** output.
- Designed a comprehensive **state machine** to account for all game states, display, and other connections.