

Marcus Francisco

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Education

University at Buffalo, Master of Science, Electrical Engineering, GPA: 3.9/4.0 June 2025
University at Buffalo, Bachelor of Science, Electrical Engineering, GPA: 3.9/4.0 June 2024
• **Coursework:** VHDL/FPGA, MATLAB/Simulink, Industrial Control Systems, Control of Power Electronics, Digital Design, Embedded Systems, Cleanroom Fabrication, Multisim, Machine Learning, Digital Integrated Circuits

Experience

Electrical Engineering Internship: Tapecon, Buffalo, NY Jan 2023 – Aug 2024 (*1.6 years*)
• Designed circuits and manufacturing processes for Flexible Hybrid Electronics, showcased at conferences in Berlin and California. Utilized knowledge of controls, programming, CAD, micro-controllers and embedded systems.
• Leadership role in getting factory production line operational. Operated large SMT machines (Stencil Printer & Universal Pick and Place) and developed schematics. Optimization of production line yield and product quality.

Student Assistant (EE Courses): University at Buffalo Sep 2023 – May 2024 (*0.7 years*)
• Student Assistant for FPGA Digital Design, Microelectronics, Embedded Systems, and Circuit Lab. Taught labs for Vivado, VHDL & C program design, debugging, & simulation, Xilinx Vitis, oscilloscope usage, and circuit building.

Electrical Engineer Researcher: University at Buffalo REU May 2022 – June 2023 (*1.1 years*)
• Interactive Digital Twin Campus Prototype development. Built a custom 3D printer and programmed firmware for the system microcontrollers. Used knowledge of device intercommunication, SPI, I2C, and WebSocket.
• Awarded the 2022 Russell L. Agrusa UB CSE Student Innovation Award. Project was published in 2022 ACM Sensors and Systems Conference. doi.org/10.1145/3560905.3568049

Professional Musician: French Horn Player, Vocalist, and Pianist 2018 - Ongoing
• Perform regularly with American Legion Band Post 264, Amherst Symphony, pit orchestras, and Brass Quintets.

Skills

Programming Languages: VHDL, MatLAB, C++, Verilog, Java, Python, VSCode, Atmel Studio, IntelliJ IDEA
Software: Simulink, Xilinx Vitis, AMD Vivado, Autodesk Inventor, AutoCAD, Solidworks, LaTeX Typesetting, Microsoft Office, MS Excel (Sensitivity Analysis, Decision Tools & RISK), PowerPoint, MS SharePoint & MS Teams.
Embedded Systems: FPGA & Microcontrollers, ESP32, Zybo Z7, Arduino, I2C, SPI, & UART communication
Test & Measurement Equipment: Oscilloscope, Logic Analyzers, data acquisition systems and sensors.
Cleanroom Fabrication: Ellipsometry, EBL, EBPVD, Silicon Wafer Cutting, Profilometry, Spin-Coating.

Honors and Awards

- **Summa Cum Laude** (2024) Electrical Engineering Bachelor of Science with Highest Distinction
- **Dean's List** (2022 – 2024) Awarded for 7 consecutive semesters at University at Buffalo
- **Russell L. Agrusa UB CSE Student Innovation Award** (2022) Contributed to a published research project.
- **Tau Beta Pi Scholar** (2022) E-Board member of UB NY Nu chapter. Academic excellence and TBP involvement.
- **Barbara & Jack Davis Endowment Fund** (2023) Academic excellence and strong connection to WNY area
- **National Honor Society & Scholar Athlete** (2019) – Varsity Volleyball, excellence in academics and athletics.

Projects

UPS System for Extended Outages: Designed a deep-cycle battery UPS with solar charging to sustain 600W load.
BlueLink Bluetooth & WiFi IoT Network: ESP32-based IoT network with a custom app and connection protocol.
Hackathon Projects: Won UB Hackathon with an embedded fire-prevention system; also contributed to award-winning IoT, security, and AR manufacturing projects, including a national competition in Dallas (2021).
5G Network Performance Analysis: Developed a data collection and visualization interface to analyze 5G KPIs.