Giovani Giagnacovo

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EDUCATION

Texas A&M University, College Station, TX May 2026

Bachelor of Science in Electrical Engineering, GPA: 3.4

Minor in Computer Science, Math

Relevant Coursework: Digital Systems Design, Computer Architecture, Electrical Circuit Theory, Random Signals and Systems, Data Structures and Algorithms, Modern Physics, Physics Electricity & Magnetism

PROJECTS

MCU PCB Design July 2024

- Created custom 3.3V power supply schematic and pcb for use in MCU design using Altium Designer.
- Designed and wired bypass capacitors, 8 MHz and 32 MHz crystals, pin headers, and reset & boot options for ARM-Cortex microcontroller schematic.
- Developed 3D models for each component and efficiently assembled and routed them on the PCB layout.
- Ensured proper capacitor placement for power supply filtering and noise minimization.

FPGA System Design June 2024

- Programmed Altera De-10 Lite FPGA in Quartus Prime to test VHDL programs: binary coded decimal display, 4-bit full adder, and BCD adder.
- Developed a mixed signal voltmeter by completing pulse width modulation schematics, simulating the design, and creating a system for the ADC using the Quartus Prime Platform Designer.
- Developed hardware for a system on a chip using the Quartus Prime platform designer to integrate NIOS II soft processor, RAM, flash, ADC, and SDRAM components.

Single Cycle Processor May 2024

- Designed the datapath for a 5 stage single cycle processor in Verilog, including the program counter, register file, ALU, and data & instruction memories.
- Developed a control unit for the single-cycle processor to manage the execution of instructions.
- Wrote comprehensive testbenches for each stage of the processor, analyzing waveforms to validate correct functionality.

Smart Robot Car Jan 2024

- Designed and built a multi-deck robot car with DC motor control, incorporating path-following capabilities, user-defined speed and distance inputs, specified angle turns, and Bluetooth functionality for remote control.

Phishnet Combatant Feb 2024

- Secured 2nd place award at TAMUhack for developing "PhishNet Combatant," a web application designed to detect and combat phishing attacks, utilizing HTML, CSS, and JavaScript to create an intuitive user interface.

EXPERIENCE

Texas A&M University August 2024 - Present

Undergraduate Research Assistant

- Analyzed and interpreted waveforms using an oscilloscope to validate signal integrity and troubleshoot issues in custom PCB designs for a computer engineering lab project.

AI4ALL August 2023 - December 2023

College Pathways Participant

- Utilized Python’s pandas and matplotlib libraries as well as different functions to collect, prepare, and analyze datasets, as well as simulate machine learning models in order to understand their functionality.

SKILLS

Software: Altium, ModelSim, LaTex, Vivado, Quartus Prime, MATLAB, Linux, Fusion 360, Microsoft Office
Programming: Verilog, VHDL, C++, SystemVerilog, ARMv8 Assembly, Python, JavaScript, HTML, CSS
Electronics: Arduino, Raspberry Pi, Altera FPGA, Soldering, Oscilloscope, Multimeter

HONORS AND AWARDS

- Dean's Honor Roll (Spring 2023), Microsoft Word & Excel 2016 Certification