Maxwell Stonham

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Education

Master of Science in Electrical Engineering August 2023 – May 2025
GPA: 4.00 University of Nevada, Las Vegas

Bachelor of Science in Electrical Engineering (Minor in Mathematics) August 2020 – May 2023
GPA: 3.87 (Cum Laude) University of Nevada, Las Vegas

- **Honors & Awards:** Dean's Honor List (Fall 2020 – Fall 2022), NV Space Grant, Marjorie & Victor Kunkel Scholarship
- **Activities:** IEEE, Tau Beta Pi (Engineering Honor Society), Avionics Member for RebelSat (UNLV's CubeSat mission)

Skills

Languages: C, C++, Python, SystemVerilog, RISC-V Assembly Language
Software: LTspice, Cadence Virtuoso, KiCad, MATLAB, Microchip Studio, Arduino, Multisim, Quartus II, Modelsim
Hardware: Oscilloscopes, multimeters, function generators, power supplies, soldering, PCB design

Experience

Graduate Teaching Assistant August 2023 – Present
University of Nevada, Las Vegas Las Vegas, Nevada

- Tutoring, grading, and coordinating a Digital Logic Design class and lab of over 30 students
- Utilizing Altera's Cyclone IV FPGA devices through Quartus II to teach the design of combinational and sequential logic

Lab Supervisor (Electrical & Computer Engineering Department) January 2022 – May 2023
University of Nevada, Las Vegas Las Vegas, Nevada

- Assembled over 200 kits per semester for classes containing microcontrollers, FPGAs, and other electronics
- Managed purchase orders of electronics worth over $1,000 used for labs and ensured that our inventory was up to date
- Proficiently handled and maintained lab equipment (oscilloscopes, multimeters, function generators, power supplies)
- Trained and managed a team of 3 to ensure a smooth transition for new hires in handling equipment and lab tasks

Aerospace Electronics Reliability Intern September 2022 – December 2022
NASA (National Aeronautics and Space Administration) Remote (Greenbelt, Maryland)

- Analyzed testing methods for commercial-off-the-shelf (COTS) parts used in constrained CubeSat missions
- Conducted studies on success and failure rates in university-led CubeSat missions and proposed solutions
- Performed risk & reliability assessments and studied radiation concerns/effects on COTS parts in low Earth orbit

Projects

Buck Converter Design Fall 2023

- Designed the circuit schematic and layout of a buck converter using ON Semiconductor's C5 (0.5um) CMOS process through Cadence Virtuoso to convert 4 - 5.5V to 3.125V at 100mA
- Tested the efficiency, power dissipation, and output at different loads using the hysteresis control chosen
- Implemented and laid out a bandgap, comparator, ring oscillator, latch circuit, and various other logic gates

Low-Voltage Differential Signaling Model Fall 2023

- Designed a Cyclone V to Cyclone V SoC high speed signaling model to transmit a bipolar differential signal (400mV voltage swing) along a 40cm PCB trace at 1Gbps taking into consideration timing, noise, and board stack-up
- Simulated an eye diagram using LTspice and included PCB parasitics (bond wire, ball, vias) for accurate results

Wearable Sensor-Based Knee Rehabilitation Device (Senior Design Project) Fall 2022 – Spring 2023

- First Prize Winner for UNLV's Spring 2023 Senior Design Competition
- Designed a device to use alongside physical therapists for remote rehabilitation for patients with knee osteoarthritis
- Developed a PCB and 3D model that was fabricated and printed for the device to be operational
- Integrated the device to a smartphone-app for patients to choose exercise routines that monitors and tracks progress

Flyback Switch-Mode Power Supply Design Fall 2022

- Designed a flyback converter using LTspice to convert 100-130V (AC) at 60Hz to 5V (DC) at 1A for a USB charger
- Simulated and tested the circuit's power dissipation and efficiency using LTspice and offered solutions to problems
- Applied a PWM control circuit using COTS parts to regulate the output voltage at 5V given different loads