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, Altium, Cadence Virtuoso, SolidWorks, MATLAB, Microchip Studio, Arduino, Quartus II, COMSOL
Hardware: Oscilloscopes, multimeters, function generators, power supplies, soldering (SMD, through-hole)

Experience

Graduate Research and Teaching Assistant   August 2024 – Present
University of Nevada, Las Vegas   Las Vegas, Nevada

- Tutored, graded, and coordinated a Digital Logic Design class and lab of over 30 students
- Utilized Altera's Cyclone IV FPGA devices through Quartus II to teach the design of combinational and sequential logic
- Conducting research with Dr. Roman Shugayev on quantum sensing applications through Nitrogen-Vacancy Centers
- Currently designing a spoof plasmon waveguide, quantum diamond spectrometer, and planar aperture dipole emitter

Electrical Engineering Intern   May 2024 – December 2024
Pololu Corporation   Las Vegas, Nevada

- Designed PCB layouts, schematics, and 3D test fixtures for current products such as regulators, current sensors, and motor drivers as well as testing and characterizing efficiency, voltage dropout, temperature, quiescent current, etc.

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)

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

K-Delta-1-Sigma Modulator   Fall 2024

- Designed a KD1S modulator ADC through LTspice using a continuous-time topology up to second-order designs
- Conducted MATLAB and LTspice simulations to validate power consumption, SNR, effective bits, and bandwidth

Buck Converter Chip Design   Fall 2023

- Designed the circuit schematic and chip 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

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