Spencer Durrant

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Education

- **B.S. Computer Engineering Dec 2021**
  University of Utah GPA 3.83/4.00
  Lawrence D. Schroder Endowed Scholar (most outstanding junior in class, awarded by the engineering department)

Relevant Coursework:

- Software
  Machine Learning (in progress), Computer Systems, Software Practice I & II, Object-Oriented Programming, Data Structures

- Hardware
  CAD of Digital Circuits (in progress), Embedded Systems (in progress), Computer Design Lab, Digital System Design, Computer Organization

Experience

- **Software Consultant**
  LightWorks Metrology, Salt Lake City, UT
  Jan 2020 - Present
  TCP Networking, Graphical User Interfaces, File I/O systems, MATLAB, C++, GitHub, robust I/O, laser metrology via interferometers and motion controllers

- **Electrical Engineer Intern**
  Colmek, Murray, UT
  Jan 2020 – Aug 2020
  Trained on oscilloscopes, multimeters, frequency counters, and waveform generators, analysis and debugging of firmware and PCBAs, wrote technical documents

- **Research Assistant**
  University of Utah Clinical Neuroscience Center
  Salt Lake City, UT
  May 2019 – Jan 2020
  MATLAB and Arduino C programs for clinical use, infrared & barometric sensors, Graphical User Interfaces, Adobe Illustrator, presentations

Skills

- **Programming**
  C/C++, MATLAB, Java, Python, C#, SQL
  Hardware Description: Verilog and VHDL

- **Practices and Technologies**
  Threading, Networking, Object-Oriented, Test-Driven Development, HTTP, Linux, GitHub, Signals and Processes

Projects

- **Pac-Man**
  Coursework Project | Collaborative *Fall 2020*
  - Developed RISC 16-bit CPU on FPGA in Verilog
  - Created a custom assembler in Python
  - Programmed the game in assembly
  - VGA, and XBOX controller peripheral support

- **RISC-V Security Hardening**
  Senior Clinic Project | Collaborative – Sandia National Labs *Sep 2020 - present*
  - Analyzing, debugging, and security hardening open-source RISC-V processor built in VHDL
  - Developing test programs in C and Python
  - Characterizing/predicting faulty behavior

- **Laser Metrology Library**
  Work Project | Independent *Jan 2020 – Sep 2020*
  - Develop MATLAB and C++ programs for computation and create a 3D coordinate system
  - Utilize JSON files for I/O between programs
  - Control physical devices with networking and serial communication

- **Tank-Wars Game**
  Coursework Project | Partner *Oct 2019 – Dec 2019*
  - Develop a client-server game in C#
  - TCP networking, JSON formatted data, and backup game statistics using SQL and a database

- **Concurrent Webserver**
  Coursework Project | Independent *Nov 2020*
  - Develop a TCP webserver in C supporting HTTP requests and utilize threading for concurrency