ABRAHAM STROSCHEIN

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EDUCATION

SEPTEMBER 2020 – MAY 2024 (IN PROGRESS)

BS IN COMPUTER ENGINEERING, UNIVERSITY OF ST. THOMAS

- 4.0 Cumulative GPA, Aquinas Scholars Honors Program, Dean's List all semesters
- Recipient of 4-year Science, Math and Engineering scholarship awarded to 4 students in 2020
- Treasurer for Rock Climbing Club, member in Instrumental Jazz Ensemble

EXPERIENCE

MAY 26, 2021 – PRESENT

UNDERGRADUATE RESEARCH INTERN, UNIVERSITY OF ST. THOMAS

- FPGA-based digital ion channel amplifier development under Dr. Lucas Koerner with NIH grant
- Design Python architecture to communicate from host computer to FPGA to peripheral ICs via SPI, I^2C
- Use Git version control (including branching and pull requests), and *pytest* for automated testing
- Write, document, and release Python package *pyripherals* on PyPI (https://pypi.org/project/pyripherals); over 3000 lines of code to organize chip data fields and registers, currently under review in the Journal of Open Source Software (https://github.com/openjournals/joss-reviews/issues/4762)
- Lead software designs and collaborate on hardware designs with a small group

MARCH 1, 2021 – MAY 21, 2021

WEB INTERN, UNIVERSITY OF ST. THOMAS

- Created webpages, news, events, widgets on OneStThomas intranet

PROJECTS

Automated Phone Locker

- User locks phone in motorized drawer using keypad with LCD feedback and phone weight detection
- Programmed an Arm Cortex M4 on a STM board in C
- Used built-in ADC, timer, interrupts, GPIO to control motion sensor, load cells, keypad, LCD, servo motors, and more

Square to Sine Wave Op-Amp Filter

- Converts square wave to sine wave with the same frequency and double the amplitude
- Used Fourier Series to calculate bandpass frequency
- Designed PCB using Multisim and Ultiboard

FPGA VGA Display Script

- Displays user-controlled color background and moving box over VGA using clock dividers and state machines
- Developed, simulated, and synthesized Verilog hardware model

SKILLS

- Software: Python, C, C++, Java, Verilog, Matlab, Git, GitHub, Office 365
- Hardware: op-amps, PCB design in Multisim and Ultiboard