

Holland Sersen

| Holland@Sersen.net | 224-324-6466 | HollandSersen.com |

Skills

Professional: *Embedded Programming, Datasheet Analysis, Embedded PCB, Electronics Repair, Live Sound*

Technical: C++, AVR, Free Rtos, TCP, UDP, Matlab, STM32, ARM Architecture, UART, SPI, I2C, UML, Linux, RF

Interpersonal: Creativity, Attention to Detail, Multitasking, Communication, Team Player, Leadership, Quick Learner

Interests: Piano, Trumpet, Modular Synthesis, 3D Printing, Mathematics, Web Development, Music Production

Projects

Bow Box - Synthmas 2023 Contest

Amsterdam, Netherlands *Real-time Embedded Audio Synthesizer*

Dec 2023 - Jan 2024

- Used communication protocols, such as SPI, to create brass touch sensors.
- Created a DSP algorithm in Matlab and converted it to C++ to run on the STM32H750 microcontroller.
- Ideated, prototyped, and executed the idea using research papers, datasheets, and UML diagrams within two weeks.

Micro Modular Project - 2022 Weisman Award

Chicago, IL *Real-Time Embedded Synthesizer for Public Art Exhibit*

Dec 2021 - Dec 2022

- Created an embedded system using C++, CAD software, soldering, breadboarding, and 3D printing within one year.
- Used a STM32H750 microcontroller to create a fast, real-time audio synthesizer with multiple modes and algorithms.
- Created a RTOS that handled a button matrix, potentiometers, and pogo pins to ensure uninterrupted interaction.

Fuzzy Man - COLUMBIA COLLEGE CHICAGO

Chicago, IL *Electrical PCB Design*

Aug 2020 - Dec 2020

- Created a fully analog guitar pedal using nodal analysis and linear algebra.
- Analyzed circuit diagrams and datasheets to produce a fully functional circuit.
- Created custom electronic PCBs and a steel enclosure using CAD Software within the two week deadline.

Relevant Experience

SynQuaNon

Phoenix, AZ *Principal Embedded Engineer*

July 2023 - Current

- Created a highly performant DSP algorithm in Matlab and converted it to C++.
- Used I2C to communicate between multiple STM32H750 microcontrollers.
- Analyzed datasheets and research papers to create and integrate UML diagrams.

Point Source LLC

Chicago, IL *NASCAR Chicago Street Race Audio Internship*

Jun 2023 - Jul 2023

- Installed and tested hundreds of speakers across all of the stands and public areas within two weeks of the event.
- Safely climbed 16 ft. ladders to uninstall 100 speakers within six hours.
- Collaborated, communicated, and improvised to help arrange the first NASCAR street race in history.

DELTRONICS CHICAGO AUDIO REPAIR

Chicago, IL *Repair Technician*

May 2022 - Dec 2022

- Repaired, troubleshooted, tested, and estimated equipment such as loudspeakers, power supplies, RF equipment, amplifiers, wireless microphones, and DJ equipment.
- Used test equipment such as multimeters, oscilloscopes, sine wave generators, and bench power supplies.
- Worked in a fast paced environment.

Education

COLUMBIA COLLEGE CHICAGO

Chicago, IL *Bachelor of Science in Music Technology With a Concentration in Hardware*

Aug 2019 - May 2023