Charles N. Daigle

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Objective

Highly motivated individual seeking positions in consumer music product research and development that enable application and expansion of a wide software/hardware skillset and an excellent intuition for musicians' needs.

Education

Northeastern University, Boston, MA — *September 2018 – Present*
Candidate for BSEE in Electrical Engineering and Music — May 2023
Concentration in Music Technology, Minor in Physics
GPA: 3.9/4.0
Achievements: IEEE-HKN Honor Society, Academic Scholarship, Deans List 2019
Relevant coursework: Embedded Audio Programming, Computer Music Fund., Circuits & Signals, Fund. of Computer Science, Embedded Design, Modern Physics, Statistical Mechanics, Calculus 3, Diff. Equations,

Projects

Mobile Real-Time Audio Effects Unit — May 2021 – Present

- Designed and built a portable digital real-time audio effects system for mobile phones in PureData

The Wahtz Wah — Dec 2019

- Built an analog guitar wah effects pedal and analyzed its frequency response
- Modified an existing design and sourced missing parts through multiple suppliers

Highbeams — July 2018

- Co-wrote, co-performed, and co-mixed an original studio single using various analog/digital audio devices
- Used the Amuse digital music distributor to release the single on multiple streaming platforms

Experience

MSI Transducers | Littleton, MA — Jan 2021 – July 2021
Test Engineering/Test Software Automation Development Co-op

- Collected and visualized electro-acoustic data of sonar transducers to confirm specification compliance
- Designed, repaired, and troubleshooted hardware and software as needed to complete test plans
- Improved UI/UX and added various automation features to two business-critical LabVIEW test softwares

Analogic | Peabody, MA — Jan 2020 – May 2020
Data Scientist/Physics Tech Co-op

- Collected X-ray image data of sample luggage to expand the dataset available to the physics CT team
- Wrote and analyzed machine learning classifiers, measurably improving existing threat detection algorithms
- Regularly compiled/sorted up to ~2 TB of training data to improve quality of machine learning outcomes

Skills

Languages: Python (Pandas, scikit-learn, various ML libraries), C/C++, LabVIEW, Fullstack webdev (PHP, HTML, CSS, JavaScript), MATLAB, Racket, Java.
Tools: Jupyter Notebook, Linux, git, bash scripting, Powershell
Software: PureData, Max/MSP,
Platforms: Linux (Ubuntu, Debian), Raspberry Pi, DE1-SoC, Arduino, Bela/BeagleBone
Hardware: Oscilloscope, impedance/gain-phase analyzer, LCR meter, switch matrix, function generator, analog circuit assembly (breadboard, soldering), analog filter, computer hardware assembly