

# Charles N. Daigle

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## 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:** Fund. of Computer Science, Embedded Design, Embedded Audio Programming, Circuits & Signals, 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 Wahztz 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

**Freelance Tutor | Boston, MA**

Nov 2018 – Present

*STEM Tutor*

- Prepare two students for middle school math/STEM with a focus on enrichment
- Preemptively introduce students to new topics of math/STEM, improving their confidence
- Prepare a student for standardized and entrance exams, resulting in them getting into Boston Latin HS

## Skills

**Languages:** Python (Pandas, scikit-learn, various ML libraries), LabVIEW, C/C++, Fullstack webdev (PHP, HTML, CSS, JavaScript), MATLAB, Racket, Java .

**Tools:** Jupyter Notebook, Linux, git, bash scripting, Powershell

**Software:** Max/MSP, PureData

**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,