

# THOMAS COOR

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## OBJECTIVE

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To create exciting electrical, mechanical, and acoustic systems that directly improve the lives of others.

## EDUCATION

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### **The Cooper Union for the Advancement of Science and Art, New York, NY**

Graduated May 2024

B.E. Electrical and Computer Engineering

## RELEVANT COURSES

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Digital Signal Processing, Electronics, Comm. Theory, Speech Processing, Arch. Acoustics, Mech. Vibrations

## AWARDS

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### **Finalist, Guthman Musical Instrument Competition, *Lorentz Violin***

2024

One of 10 finalists for the 2024 Guthman Musical Instrument Competition, the international musical technology competition hosted at Georgia Tech. Designed a novel instrument that uses magnetic disks of varying waveforms that spin over an inductor to generate a current whose frequency is heard as musical pitch. More information: <https://guthman.gatech.edu/>

## WORK EXPERIENCE

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### **Audio and DSP Systems Engineer, Frontier Audio Labs, Chicago, IL**

2025

Worked with a startup team designing and implementing ANC, 3D-Awareness, and 90dB Limiter for next-gen hearing protectors. Firmware tasks in signal routing, filter implementation, and perceptual tuning. Responsible for acoustic hardware design and acoustic measurements. Owned acoustics through EVT/DVT/PVT phases in China.

### **Acoustic Systems Co-op, Bose Corporation, Framingham, MA**

Summer-Winter 2024

Designed next-gen calibration scheme and algorithms that enabled users to calibrate the EQ of their soundbar product using a microphone, replacing the current system.

### **Architectural Acoustics Intern, Threshold Acoustics, LLC, Chicago, IL**

Summer 2023

Assisted with performing acoustic simulation, building digital audio testbenches, constructing and testing a Dodecahedron speaker, and taking various sound level measurements in performance spaces around Chicago.

### **Studio Assistant Intern, Andy Cavatorta Studio, Brooklyn, NY**

Summer 2022

Assistant to artist and engineer Andy Cavatorta in the design and building of audio sculpture titled "The Whale" for the MIT Museum, including sensor calibration, musical tuning, creating custom electronic hardware, and generating music from medieval music and whale songs using a recurrent neural network.

## PROJECTS

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### **Mixed-Signal Radio Receiver, Senior Capstone Project**

Fall 2023-Spring 2024

A HAM radio (14.35 MHz) receiver, including an antenna, Low-Noise Amplifier, IF Mixer, and digital Single-Sideband Demodulator, and speaker.

### **Cicadas, Generative AI for Architecture Final Project**

Spring 2024

Built a swarm of mini robots that communicate by playing and listening to audio chirps, and decoding them in the frequency domain, which work together to synchronize the time and pitch of their chirps

### **Induction Tea Warmer, Junior Projects Final Project**

Spring 2023

High-current oscillator circuit (~150V, 30A, 32kHz) that heats up an iron slug submerged in a cup of water to boil it.

## LEADERSHIP

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### **Chair, Poco a Poco: The Cooper Consort**

Fall 2021 - Spring 2024

Elected head, arranger, bassoonist and pianist for Cooper Union's orchestra.

## SKILLS

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C, **Python**, MATLAB/Simulink, **HTML/CSS**, JavaScript, **Odeon**, Acoustic Test Equipment, **KiCAD**, LTspice, **RHINO**, AutoCAD, **Solidworks**, Manual Machining, **CNC Machining**, 3D Printing, **LATEX**

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