THOMAS COOR

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OBJECTIVE

To create exciting electrical, mechanical, and acoustic systems that give people meaning and joy.

EDUCATION

The Cooper Union for the Advancement of Science and Art, New York, NY Graduated May 2024
B.E. Electrical and Computer Engineering

RELEVANT COURSES

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

WORK EXPERIENCE

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

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 ($\sim$150V, 30A, 32kHz) that heats up an iron slug submerged in a cup of water to
boil it.

Reverberation Detection Machine Learning Model, Speech & Audio Final Project Fall 2022
Created a Convolutional Neural Network that predicted the general room size a sound originated from based on
the amound of reverb present in the time-domain signal.

AWARDS

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 can
be found here: https://guthman.gatech.edu/

LEADERSHIP

Chair, Poco a Poco: The Cooper Consort Fall 2021 - Spring 2024
Elected head, arranger, bassoonist and pianist for Cooper Union's orchestra.

SKILLS

C, **Python**, Matlab, **Simulink**, 3D Printing, **Acoustic Test Equipment**, Autodesk Inventor, **RHINO**,
KiCAD, **LTSPICE**, R, **Odeon**, Laser Cutting, **Vacuum Forming**, Machining Tools, **CNC Milling**, LaTeX