

Jatin Chowdhury

Audio Signal Processing Engineer

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Education

Stanford University, Center for Computer Research in Music and Acoustics

Palo Alto, CA

M.A. IN MUSIC, SCIENCE, AND TECHNOLOGY

Sept. 2018 - June 2020

- Relevant Coursework: Advanced Digital Signal Processing, Machine Learning, Spatial Audio, Music Recording.
- Research: Nonlinear Signal Processing, Virtual Analog Modelling, Modal Signal Processing.
- Denning Family Fellowship for the 2018-2019 academic year.

University of Southern California

Los Angeles, CA

B.S. IN ELECTRICAL ENGINEERING, PHYSICS (MINOR), MUSIC RECORDING (MINOR)

Aug. 2014 - May 2018

- Relevant Coursework: Signal Processing, Circuit Design, Digital Logic, Electromagnetics, Software Design.
- USC Presidential Scholarship, USC Renaissance Scholar

Experience

Chowdhury DSP

Denver, CO

AUDIO SIGNAL PROCESSING ENGINEER

Oct. 2021 - PRESENT

- Developed signal processing algorithms for real-time audio processing and synthesis.
- Contributed to open-source audio plugins and libraries.

Tesla Motors

Palo Alto, CA

AUDIO TEST ENGINEER

Aug. 2020 - Oct. 2021

- Developed audio system signal flow layouts for vehicles using AudioWeaver.
- Developed end-of-line tests to ensure vehicle audio system quality using Python and C++.
- Contributed to the signal processing and tuning for the vehicle pedestrian warning speaker.
- Contributed to testing and validation software for audio system firmware.

Publications & Presentations

A Comparison of Virtual Analog Modelling Techniques

November 2020

AUDIO DEVELOPER CONFERENCE

London, UK

- Presented a virtual analog model of the Klon Centaur guitar pedal, developed using nodal analysis, Wave Digital Filters, and Recurrent Neural Networks.

Stable Structures for Nonlinear Biquad Filters

Sept. 2020

PROC. OF THE 23RD INTERNATIONAL CONFERENCE ON DIGITAL AUDIO EFFECTS

Vienna, Austria

- Presented at the DAFx-2020 conference.
- Available on the DAFx Archives.

Real-Time Physical Modelling for Analog Tape Machines

Sept. 2019

PROC. OF THE 22ND INTERNATIONAL CONFERENCE ON DIGITAL AUDIO EFFECTS

Birmingham, UK

- Oral presentation at the DAFx-2019 conference.
- Available on the DAFx Archives.

Skills

Programming Languages

C/C++, Python, Bash, Jai, MATLAB, Faust, LaTeX, Rust, Javascript

Tools/Frameworks

CMake, Git, Linux CLI, Visual Studio, Xcode, GitHub Actions, JUCE API, CLAP

Projects

Chowdhury DSP

FOUNDER, ENGINEER

June 2018 - PRESENT

- Developed audio plugins including tape emulation, phaser effects, distortion, and delay matrix effects.
- Contributed audio effects and other DSP code to the open-source Surge Synthesizer project.

NoLava Recording Studios

Los Angeles, CA

CO-FOUNDER, AUDIO ENGINEER, TECHNICAL ADVISOR

Aug. 2017 - July 2018

- Recorded, mixed, and mastered for artists of various styles including acoustic, electronic, rock, country, and punk.
- Installed, repaired, and maintained speakers, microphones, keyboards, amplifiers, and other musical equipment.