

# Jatin Chowdhury

## Audio Signal Processing Engineer

✉ jatin@chowdsp.com | 🏠 ccrma.stanford.edu/ jatin | 📧 jatinchowdhury18 | 📷 jatinchowdhury18

### 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

#### Computationally Efficient Physics Approximating Neural Networks for Highly Nonlinear Maps

Oct. 2022

PROC. OF THE CONFERENCE ON RESEARCH IN ADAPTIVE AND CONVERGENT SYSTEM

New York, USA

- Co-authored with Christopher Johann Clarke and others.
- Available on the ACM Digital Library.

#### Emulating Diode Circuits with Differentiable Wave Digital Filters

June 2022

19TH SOUND AND MUSIC COMPUTING CONFERENCE

Saint Etienne, France

- Co-authored with Christopher Johann Clarke.
- Available on Zenodo.

#### RTNeural: Fast Neural Inferencing for Real-Time Systems

June 2021

ARXIV E-PRINTS: AUDIO AND SPEECH PROCESSING

Online

- Presents a neural network inferencing library for real-time systems.
- Available on the ArXiv.

#### 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