

Jatin Chowdhury

Audio Signal Processing Engineer

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Experience

Chowdhury DSP

AUDIO SIGNAL PROCESSING ENGINEER

Sammamish, WA

Oct. 2021 - PRESENT

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

Tesla Motors

AUDIO TEST ENGINEER

Palo Alto, CA

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.

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

Publications & Presentations

Sample Rate Independent Recurrent Neural Networks for Audio Effects Processing

Sept. 2024

PROC. OF THE 27TH INTERNATIONAL CONFERENCE ON DIGITAL AUDIO EFFECTS

Guildford, UK

- Co-authored with Alistair Carson, Alec, Wright, Vesa Välimäki, and Stefan Bilbao.
- Available on the DAFx Archives.

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.

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

Tools/Frameworks

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