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 — *Sammamish, WA*

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

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