Satyarth Arora

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Publications

S.Arora and C.Bennett Fast Algorithms for BlackBox Modeling of Static Hammerstein Nonlinearities. (Oct 2022)
Paper

Experience

Audio DSP Research, Samsung Research America (DMS Audio Lab) Valencia, California
Internship *May 2025 - Aug 2025, Full-time*

- Came up with novel signal processing algorithms
- Designed and developed prototyping and testing framework for audio signal processing algorithms
- Developed nonlinear models for Loudspeakers and Microdrivers

Computer Science, University of Miami Coral Gables, Florida
Research Assistant *Dec 2025 – Present, Full-time*

- Collaborating with the Physical Therapy Department on Human Balance Research
- Developing Camera Software and analysis tools

Computer Science, University of Miami Coral Gables, Florida
Head Teaching Assistant *Aug 2023 - Dec 2025, Full-time*

- Manager for all Teaching Assistants in the Computer Science Department
- Secondary Instructor for Operating Systems (CSC 421), System Programming (CSC 322), Computer Networks (CSC 424), Computer Programming II (CSC 220)
- Lab Instructor for Data Science with R (CSC 115)

Education

University of Miami Coral Gables, Florida
PhD in Computer Science; ***Advisor: Dr Mitsunori Ogihara*** *Aug 2023 – May 2026*
Research focused on Antialiasing Algorithms and Semantic Audio

University of Miami Coral Gables, Florida
M.S in Music Engineering Technology; ***Advisor: Dr Christopher Bennett*** *Aug 2021 –May 2023*
Research Focussed on DSP Algorithm Optimization and Audio Software Development *GPA : 3.9/4*

Projects

AuxPort | *GitHub*

- Independently developed open source C++ library that provides Audio, DSP, and GUI modules for Audio Software Development.

WatchDog | *GitHub*

- Real time gunshot detector and response system
- Wrote the audio recording and network streaming library that sends in audio input to the Gunshot Detection Module

AuxPlugins | *Website*

- Assorted Audio Effects and Synthesizer Plugins
  - *AuxRumble* – Psychoacoustic Bass Enhancer for Small Speaker setups
  - *AuxWiden* – Filter based Stereo Widener
  - *AuxShaper* – Bezier Curve based Waveshaper with Antialiasing
  - AuxSynth – Additive Harmonic Synthesizer
  - AuxRack – Effect Rack with Pitch Bend, Delay, Distortion, Filters

Skills

Languages | **Frameworks** C++, C, MATLAB, C#, Java, Python, JavaScript, SQL, Objective-C | JUCE, RackAFX, ASP.NET,p5.js

Methodologies | **Technologies** Agile, Scrum, OOP, Functional Programming | MS-SQL, Oracle SQL, OWL Data Diode, Git, Arduino, CMake, Simulink, MaxMSP

Libraries: CURL, uvgRTP, LibTorch, RTAudio, PortAudio