Suhel Keswani

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EDUCATION

Georgia Institute of Technology **August 2021 – May 2025**
Bachelor of Science in Computer Science, Minor in Music *Atlanta, GA*

- 3.93 GPA (Faculty Honors and Dean's List)
- Coursework Concentrations: Signal Processing; Embedded Systems; Modeling & Simulation
- Activities: Jazz Combos (principal guitarist); CREATE-X Startup Capstone Design; GT Mixed Reality

Graduate School (Pending Applications) **August 2025 – May 2027**
Master of Science in Electrical & Computer Engineering *United States*

- Graduate coursework/research interests in Signal Processing, Acoustics, Audio Engineering, & Deep Learning

EXPERIENCE

Georgia Institute of Technology – Music Informatics Group **January 2024 - May 2024**
Undergraduate Research Assistant *Atlanta, GA*

- Researched the use of Support Vector Machines for segmentation of musical audio recordings by spectral features from Short Time Fourier Transforms and wrote a related research proposal
- Ran Deep Learning experiments and authored in ISMIR 2024 conference paper submission related to uncertainty estimation in Music Emotion Recognition tasks within Music Information Retrieval research field

Grokker Inc. **May 2023 - August 2023**
Software Engineering Intern *San Jose, CA*

- Architected, developed, and deployed high-performance event-driven microservice using Apache Kafka, Node.js, and MongoDB to process 60M+ messages annually from ∼10k users
- Iteratively refined microservice to drive high throughput and be highly scalable with caching, querying, and algorithmic optimizations
- Collaborated closely with engineering leadership to outline and execute multi-stage production deployment plan, including migrations of 400K+ records and rebuilding customer-facing front-end experience
- Worked in Agile (Scrum) environment, contributed technical documentation, and adhered to CI/CD pipeline

PROJECTS

Binaural 3D Spatialization Plugin

- Developed Digital Audio Workstation (DAW) plugin prototype using MatLab under mentorship of Dr. Aaron Lanterman to synthesize stereo spatial audio in real-time
- Programmed digital audio signal processing given azimuth, elevation, and distance parameters plus Head-Related Impulse Responses (HRIRs) from Spatially Oriented Format for Acoustics (SOFA) files

Digital Audio Effects Unit for Reverberation

- Developed line-level audio effects hardware unit for artificial reverberation using Daisy Seed single-board computer with ARM Cortex-M7 microcontroller
- Programmed Schroeder-Moorer reverberation model in C++ using allpass and lowpass feedback comb filters implemented with delay lines

SELECTED COURSEWORK

- *Signal Processing:* Intro to Signal Processing (Scheduled: Digital Signal Processing, Signals & Systems)
- *Embedded Systems:* Embedded Systems Design, Digital Hardware Design Lab, Circuits & Electronics
- *Mathematics:* Machine Learning, Differential Equations, Linear Algebra, Statistics, Discrete Mathematics
- *Audio & Music Technology:* Recording & Mixing, Audio Technology 1, Computer Audio

SKILLS & TECHNOLOGIES

C/C++, Python, MatLab, Digital Signal Processing, Embedded Systems Design, FPGA prototyping (Cyclone V & DE-10 Standard), VHDL, ARM Assembly, Git, Max/MSP, Critical Listening, Digital Audio Workstations (DAWs), Music Theory