

# 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

- 3.92 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

### Santa Clara University Laptop Orchestra (SCLOrk)

July 2020 - October 2020

*Research Assistant Intern*

Santa Clara, CA

- Edited, optimized, documented, & published Frequency Modulation synthesis double bass synthesizer model definition to SCLOrkSynths code repository, an official SuperCollider quark extension

## PROJECTS

### Binaural 3D Spatialization Plugin

- Developing Digital Audio Workstation Plugin using JUCE Framework & C++ under mentorship of Dr. Aaron Lanterman using Head-Related Transfer Functions (HRTFs) to create stereo spatial audio in realtime
- Prototyped realtime audio signal processing in MatLab using Spatially Oriented Format for Acoustics (SOFA) files with azimuth, elevation, and distance parameters

## 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