Suhel Keswani

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EDUCATION

Georgia Institute of Technology **Aug 2021 – May 2025**
B.S Computer Science, Minor in Music - 3.92 GPA *Atlanta, GA*

- Coursework Concentrations: Signal Processing; Embedded Systems; Modeling & Simulation
- Activities: Jazz Combos (principal guitarist); CREATE-X Startup Capstone Design; GT Mixed Reality

EXPERIENCE

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

- Researched the use of Support Vector Machine (SVM) for the segmentation of musical audio recordings by spectral features from Short Time Fourier Transform (STFT) and wrote a related research proposal
- Ran Deep Learning experiments and authored in conference paper submission for ISMIR 2024 related to uncertainty estimation in Music Emotion Recognition

Grokker Inc. **May 2023 - Aug 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 - Oct 2020**
Research Intern *Santa Clara, CA*

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

PROJECTS

Audio Spectral Analysis and Signal Processing Tool

- Realtime audio spectral analysis and graphical frequency band display on audio files through Discrete Fourier Transformation (DFT) using Java, Beads library, and Processing (IDE)
- Configurable high pass, low pass, and bandpass filtering
- Dynamically computes and resynthesizes strongest frequency from signal
- Utilizes peak detection to identify rhythmic beats

Chord Crafter

- Developed software instrument with SuperCollider to convert inputted standard chord notation into MIDI data for real-time external audio synthesis in DAWs
- Intuitive GUI and algorithmic harmonic analysis allows for notation of chords to the thirteenth scale degree with inversions

SELECTED COURSEWORK

- *Signal Processing:* Intro to Signal Processing (Planned: Digital Signal Processing, Signals & Systems)
- *Embedded Systems:* Embedded Systems Design, Digital HW 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

Python, C/C++, MatLab, Digital Signal Processing, Machine Learning, Sound & Music Computing, Critical Listening, Music Theory, FPGA prototyping (Cyclone V & DE-10 Standard), VHDL, Assembly, Git