

KAUSHAL SALI

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EDUCATION

M.S. in Music Technology Aug 2018 – May 2020
Georgia Institute of Technology

Coursework: Audio Software Engineering, Digital Signal Processing, Machine Learning, Deep Learning, Music Information Retrieval, Computer Vision.

B.Tech. in Computer Engineering Aug 2013 – May 2017
Vishwakarma Institute of Technology

EXPERIENCE

Software Developer May 2019 – Aug 2019
Georgia Institute of Technology (Groove Machine)

- Overhauled the Groove Machine web-app, a pedagogical musical sequencer.
- Redesigned the interface, implemented animations and improved the audio pipeline.
- Skills: Pixi.js, Tone.js, Scrum.
- More: www.kaushalsali.com/projects?name=groove-machine

Software Engineer July 2017 – Mar 2018
eQ Technologic

- Developed the UI for job queuing feature of eQube-MI, a data migration product.
- Coordinated with the design team and provided workflow insights to guide design decisions.
- Skills: Javascript, Backbone.js, Marionette.js, Team coordination.

Software Development Intern Jun 2015 – Aug 2015
Persistent Systems

- Revived an old software that uses Laban Notation to animate a dance.
- Improved the Laban notation editor by debugging and fixing bugs.
- Skills: C++, Git.

PROJECTS

MIDI Editor Jan 2020 – May 2020

- Built a MIDI file player and editor that supports General MIDI 1.0 spec.
- Implemented a synth using soundfonts and MIDI message sequencing pipeline. Optimized performance using multithreading.
- Skills: C++, JUCE, Object Oriented Programming.
- More: www.kaushalsali.com/projects?name=midi-editor

Generating Impulse Responses using Recurrent Neural Networks Aug 2019 – May 2020

- Surveyed RNN training techniques like truncated BPTT, teacher forcing and auxiliary loss for raw audio generation of room impulse responses for convolutional reverb.
- Skills: Python, PyTorch, Numpy, Matplotlib, Deep Learning.
- More: www.kaushalsali.com/projects?name=generating-room-impulse-responses

PUBLICATIONS

- Bin, S. A., Bui, C., Genchel, B., Sali, K., Magerko, B., & Freeman, J. From the museum to the browser: Translating a music-driven exhibit from physical space to a web app. Web Audio Conference (2019).

SKILLS

Languages:

C++ C Javascript
Java CSS HTML
Max/MSP C# SQL
Matlab

Libraries:

JUCE PyTorch Numpy
Scikit-learn Matplotlib
Pixi.js P5.js Matter.js
Tone.js Marionette.js
jQuery Backbone.js
Android Node.js
Socket.io

Tools:

Git Linux Unix
Unity Emacs
Ableton Live

General:

Algorithms Data Structures
Object Oriented Programming
Design Patterns Unit Testing
Web Development
Machine Learning
Deep Learning
Digital Signal Processing
Agile Development
Project Management
Sound Synthesis

Ball Dance

Nov 2019 – Dec 2019

- Created an interactive musical artwork as a web-app that generates music from a chaotic physics based system using OSC messages.
- Skills: Javascript, P5.js, Matter.js, Max/MSP, Ableton Live, Sound Design.
- More: www.kaushalsali.com/projects?name=ball-dance

Sound Synthesis With Learnable Mappings

Oct 2019 – Nov 2019

- Created five custom timbral parameters for Ableton Live's Analog instrument.
- Built an interface to train an artificial neural network to generate mappings between the synth controller interface and the synth parameters.
- Skills: Max/MSP, OSC, Ableton Live, Sound Design, Machine Learning.
- More: www.kaushalsali.com/projects?name=learnable-sound-mappings

Modelling Equalization Effects using Neural Networks

Aug 2018 - May 2019

- Built a neural network that can model the transfer function of lowpass, highpass, lowshelf, highshelf, peaking and notch filters using raw audio.
- Skills: Python, PyTorch, Numpy, Matplotlib, Deep Learning, DSP.
- More: www.kaushalsali.com/projects?name=modelling-equalization-effects

SpaceBoy

Aug 2014 – Dec 2014

- Designed and developed a 2D action-shooter game using Unity game engine.
- Skills: C#, Unity, Inkscape.
- More: www.kaushalsali.com/projects?name=spaceboy

EXTRA CURRICULAR

- Trained in Indian classical music for more than 7 years.
- Violinist for the band 'Coffee for Giraffes'. (2017-2018)
- Competed in inter-college theatre competitions.
- Trek and camp leader at Foliage Outdoors: an eco tourism organization. (2011-2012)
- 2nd Dan Black belt in Taekwondo.
- State level bronze medallist in Wushu.
- Learnt German for 3 years and Japanese for 1 year.