Ryan Taylor Rose

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Education

Georgia Institute of Technology – Atlanta, GA

Masters of Science Candidate – Music Technology   May 2019

Case Western Reserve University – Cleveland, OH
- 3.71/4.00 GPA

Bachelor of Science in Engineering – Computer Engineering   May 2017

Bachelor of Arts – Music (Saxophone)   May 2017

Experience

Product Control/Content Services Teams – Bose Corporation, Framingham, MA   May 2018 to August 2018

Software Engineering Intern

- Architected, developed, and tested a microservice in Go responsible for managing webhook calls to 3rd parties integrating with Bose cloud services. Spearheaded utilization of a new pub/sub platform and created a model client implementation for this platform in Go.
- Helped to architect and implement a method of reducing database lookups for information passed between cloud services and devices. Aligned this strategy across multiple teams including IoT, platform, embedded, and application-level teams.
- Developed a tool for 3rd party music service providers to test integration code in an effort to facilitate self-integration with Bose products. Implemented as a single page web application using React.

TuneTable – Graduate Research Assistant – Expressive Machinery Lab, Georgia Tech, Atlanta, GA   August 2017 to Present

Software Lead

- Designing and implementing iterations of TuneTable: a tangible user interface that teaches computational concepts to middle- and high-school students through algorithmic music creation. Iterations have used computer vision (reacTIVision), Processing (p5), openFrameworks (C++), and web technologies (Web Audio API, Node.js, Electron).

Cloud Operations Team – Bose Corporation, Framingham, MA   May 2017 to July 2017

Software Engineering Intern

- Created an internal developer portal facilitating microservice deployment to an emerging cloud platform. Exposed metrics, container health, logs, and tools otherwise inaccessible to developers. Portal itself was deployed as a model microservice on the cloud platform (Ruby/Sinatra web app), providing an example to developers. Also created an interactive Slack bot for quick access to information in microservice notification channels.

Skills

Programming Languages

Proficient: Go, JavaScript (ES6), Python, Node.js/HTML/CSS/Bootstrap/jQuery

Limited Experience: C, C++, Android, MATLAB, Ruby, Audio Languages (SuperCollider, Max/MSP, Pure Data, Web Audio)

Software and Computer Engineering Tools

Docker, Kubernetes, Jenkins, Git

Sensors, Microcontrollers, Minor Circuitry

Musician

Alto/Soprano/Tenor saxophonist, singer, arranger (primarily a cappella)

Projects

Recorder Playing Robot   March 2018 to May 2018

Built a robot capable of playing the recorder using solenoid actuators and valves, driven by an Arduino and Max/MSP.
The robot incorporates gestural expression into performance via a linear actuator that moves the recorder, and a servo that rotates
its head. A Max patch allows for sequenced MIDI input (for recorder output and gestural control) or live control with a MIDI controller.

Twitthear: An Audio Interface for Twitter   November 2017 to December 2017

Built an audio interface that brings Twitter to the virtual personal assistant Amazon Alexa. Twitthear encodes information
about a tweet into a musical phrase using sentiment analysis, semantic rhythm, and various sonification techniques. A user,
gaining context about the tweet through music, can decide whether or not to save the tweet to read on a visual interface later.

More projects can be found at rytrose.com/projects.

Publications

A. Sarwate, R. T. Rose, J. Freeman, and J. Armitage, "Performance systems for live coders and non-coders," in Proceedings of the international conference on new interfaces for musical expression, Blacksburg, Virginia, USA, 2018, p. 370–373.