Nathan Conroy

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Engineering Experience

Amazon ♦ Alexa - Automated Speech Recognition Engine **Cambridge, MA**
Software Development Engineer July 2018 – Dec 2019

- Member of the team that owns Alexa's cloud-side speech-to-text engine, which converts raw audio to text for every single Alexa interaction, serving traffic of millions of spoken utterances per hour worldwide
- Frequently collaborated with applied scientists with backgrounds in speech and signal processing to build features that improved the experience for Alexa users by reducing latency and improving recognition accuracy
- Regularly engaged in cross-team scoping and collaboration for project work to ensure that changes were supported end-to-end across Alexa's services
- Performed operational duties as a member of our on-call rotation, in which I investigated and resolved customer impacting issues with severity varying from isolated performance degradation to large-scale outages
- Benchmarked and deployed Alexa cloud-side software to production as a member of the engine release team
- Tech lead for an ASR engine project that improved Alexa's false alarm rate for follow-up mode by 28%
- Implemented engine support for "preview results," enabling tablet users to see their spoken transcription in real-time as they speak to Alexa on their device
- Saved significant engineering effort for model releases by implementing audio upsampling, discontinuing the need for modeling scientists to build and maintain separate acoustic models for different audio sample rates

Amazon Web Services ♦ Payments and Fraud **Seattle, WA**
Software Development Engineer Intern Summer 2017

- Optimized the processing of forgiven invoices for AWS service charges by migrating from hourly batch processing to event-driven processing, reducing the load on our services for charges that are granted amnesty (16% of all AWS charges, roughly 400,000 per month in 2017)
- Worked with Java, Spring framework and a variety of AWS services including SNS, SQS, and DynamoDB

Lockheed Martin **Syracuse, NY**
Software Engineer Intern Summer 2016

- Contributed to development of a health management framework for autonomous underwater vehicles in Java and C++, working directly with mechanical and systems engineers
- Developed a web app displaying an interactive hierarchy of vehicle components and sensors in JavaScript

Education

University of Rochester **Rochester, NY**
B.S. in Computer Science (Human-Computer Interaction concentration) 2014 – 2018

- Awarded first prize in DandyHacks 2017, the University's annual hackathon
- Teaching assistant for C.S. department for 5 semesters - Led lab sessions twice a week, graded assignments
- Men's Varsity Cross Country, Track & Field Athlete (4 yrs, Captain 1 yr), 2x UAA All-Academic Team

Projects

TelemetryJet - Real-Time Data and Control Platform for Makers 2020 – Present

- Device integration platform for live streaming, recording, graphing, and sharing sensor data *(in development)*
- Contributing to full-stack development using C++, JS, React, Blueprint JS, SQL, HTML, CSS

MovieShelf - Movie Recommendation Web App for Groups 2017

- An engine for recommending movies to a group of people based on individual preferences utilizing the IMDB API
- Contributed to backend and REST API development using Java, Spring Boot, JS, SQL

Skills

Languages: Java, C++, Python, JavaScript, C, SQL, HTML, CSS
Frameworks/Tools: React, Spring Boot, JPA, RESTful web services, Android, Gradle, Linux, Git