Nathan Conroy

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Software Development 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 modeling teams of applied scientists with backgrounds in speech and signal processing to implement features that directly improved the experience of Alexa customers 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 to investigate and resolve customer impacting issues with severity varying from isolated performance degradation to large-scale outages. This included an on-call rotation in which I responded to pages relating to high severity issues and alarms 24/7
- Member of the ASR Engine release subteam, responsible for benchmarking and rolling out Alexa cloud-side software to production

Accomplishments
- 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" for tablet dictation, enabling users to see their transcription in real-time as they are speaking 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

- Delivered a project which optimized the processing of forgiven invoices for AWS service charges
- Migrated 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 a variety of AWS services including SNS, SQS, and DynamoDB

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

- Assisted in developing a health management framework for autonomous underwater vehicles
- Worked directly with software, systems, and mechanical engineers
- Demonstrated progress to team and stakeholders at biweekly sprint demos
- Held a U.S. National Security Clearance at the Secret level

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
    Created *Rubik Rooms*, a co-operative puzzle game built using Java and OpenGL in which players manipulate their environment with cube rotations to navigate to the exit of obstacle filled rooms
- Teaching assistant for C.S. department for 5 semesters
    Led lab sessions twice a week to teach core course concepts, graded weekly lab assignments
- Captain of Varsity Cross Country Team (1 yr), Member of the Varsity Track & Field and Cross Country teams (4 yrs)
- Honored University Athletic Association All-Academic Team twice

Skills and Technology

Proficient in Java, C++, Python
Experienced with Spring framework, RESTful web services, Android development, SQL, JavaScript, HTML, CSS