

EDUCATION

University of Wisconsin - Madison

Madison, WI

B.S. in Computer Science, Phi Beta Kappa Member (Top 5%)
3.9/4.0 Cumulative GPA

Expected May 2023

Capital One Software Engineering Intern

Remote

June 2022 – Aug 2022

- Implemented infrastructure and database as code for the Transaction Intelligence Machine Learning team.
- Leveraged **Jenkins** declarative pipelines to provision database clusters on **AWS**, support seamless multi-region failover, and validate snapshot data. Reduced time to deploy **AWS** infrastructure by 90% by eliminating developer interaction after defining infrastructure as code.
- Automated the manual process of executing database schema changes and change order approval via **Flyway** and declarative pipelines.

Cogito Telephony Engineering Intern

Remote

Jan 2022 – May 2022

- Spearheaded the development and automation of a stress test framework in **Python** for Cogito Dialog resulting in safe and reliable builds without developer interaction.
- Decreased the duration of build and stress test of the telephony subsystem by 10x and supported continuous integration via **Jenkins**.
- Wrote and deployed a **Python** web app to visualize 100+ key metrics and logs from the build and stress test automation.
- Managed several **AWS**, hybrid, and on-premise environments, supporting both the telephony legacy platform and telephony on **Kubernetes**.

Zendesk Software Engineering Intern

Madison, WI

Oct 2020 – June 2021

- Created tool to provision a **Spinnaker** development environment via **Terraform** on **AWS**, containing a fully-fledged Kubernetes cluster for test deployment. Reduced developer setup time from a full day to 10 minutes.
- Extended the collection of **Spinnaker** metrics by adding support for stage rollback events. Collected and visualized metrics using **Datadog** and created alerts for abnormal stage event behaviors.
- Created a secret manager container for **Hashicorp Vault** from the ground up using the sidecar pattern. Fully written in **Go**, it supports Auto-Auth via a **Kubernetes** service account token, fetching and auto refreshing Vault KV secrets, and generating **AWS STS** tokens.

PROJECTS

Automatic Chord Recognition by Music Source Separation [github](#)

- Researched a novel automatic chord recognition method where songs are preprocessed by a music source separation model before being fed into a convolutional recurrent neural network.

Google Summer of Code 2021 Participant for Spinnaker [github](#)

- Developed a hosted playground version of Spinnaker aimed for new users to test out its UI and core features.
- Infrastructure as code via **Terraform** to provision environment on **AWS** using an EKS cluster. Deployment of Spinnaker via Armory's OOS Spinnaker Operator.
- AWS Load Balancer Controller to expose deployments, private ECR registry and image security policies via Portieris.
- Implemented AuthN via Google OAuth 2.0 and AuthZ rules via a custom Spinnaker plugin.

SKILLS

Programming Java, Python, Go, Perl, C, MATLAB, SQL, Bash, HTML, CSS, Javascript
Tools Docker, Kubernetes, Terraform, AWS, GCP, Spinnaker, Git, Jenkins, Linux, \LaTeX
Languages English, Korean