Christopher Lin

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https://clin155.github.io/portfolio

Education

University of Michigan **Ann Arbor, MI**
Bachelor of Science in Engineering in Computer Science *August 2020 - April 2024*

- GPA: 3.9/4.0
- Relevant Coursework: Data Structures and Algorithms (EECS 281), Web Systems (EECS 485), Computer Networks (EECS 489), Database Management Systems (EECS 484), Machine Learning (EECS 445), Computer Vision (EECS 442), Computer Organization (EECS 370)

Relevant Experience

Zillow Group **Seattle, WA**
Software Engineer Intern - Developer Experience Platform May 2023 - August 2023

- Implemented a containerized GoLang CLI that concurrently ran a set of jobs pulled from a remote repository, collected metadata output, and aggregated the data into a single JSON.
- Deployed the CLI to a GitLab Runner as a part of a greater CI/CD pipeline that automated deployment onto ZGCP (Zillow Group Container Platform), a Kubernetes platform that hosted a majority of services within Zillow Group.
- Developed a Kubernetes introspection API service that retrieved cluster-level metadata information by querying the kube API server with both an in-cluster and out-of-cluster configuration. The service was deployed to all clusters on ZGCP and exposed on the internal ALB gateway of the cluster.

ECSite Inc. **San Jose, CA**
Software Intern *May 2022 - August 2022*

- Built out a backend GraphQL API for an end-to-end, SASS product for fiber-optic, 5G deployment, testing, and management. The API was an anomaly detection report generator for fiber tests that gave customers of the platform a resource for identifying falsified tests on their fiber-optic cables.
- Utilized Flask and Docker to containerize and deploy the API to AWS ECS (Elastic Container Service).
- Built a React single-page application that allowed the customer operations team to perform CRUD (Create, Read, Destroy, Update) operations on a MongoDB database, increasing their productivity when performing demos to potential and current customers.

Multidisciplinary Design Program - Caterpillar Inc. **Ann Arbor, MI**
Student Software Engineer *January 2022 - December 2022*

- Developing a statistical data model that accurately predicts customer response to maintenance alerts, used to determine the value of particular alerts and characterize the conditions where alerts deliver the highest savings. Model is developed using pandas and matplotlib.
- Created a dashboard using AWS Quicksight and Tableau to display prediction data and statistics on how this prediction was formed.
- Collaborated with 4 other team members to deliver weekly research and design results to the CAT Digital team.

Xerus Systems **Santa Clara, CA**
Software Intern *May 2021 - August 2021*

- Aided in the development of a networking scanning tool for information and security purposes. Network tool included OS detection, host discovery, and TCP/UDP port scanning.
- Addressed compatibility issues for the network tool on the Linux platform in order to port the tool to an IOT hardware device.
- Developed a CLI tool to parse through data from network scans and write it to a SQL database.

Projects

Search Engine & Custom MapReduce Framework **Flask, Sockets, AWS**

- Created a custom search engine served by a Flask REST API with a custom MapReduce framework. Invoked the MapReduce framework to build an inverted index in order to rank the search results by TF-IDF score.
- The MapReduce framework used threading and sockets to simulate a manager/workers distributed system. Utilized round-robin load balancing to distribute jobs, and hosted on AWS.

Spotify Playlist Manager & Curator **React, Node.js, MongoDB**

- Constructed a full-stack web application for managing spotify playlists with a React frontend and a Node.js REST API backend.
- App includes web playback and recommendation-based playlist curation based on a set of seed tracks, artists, and genres by leveraging the Spotify Web API. App also includes song bookmarking, the ability to modify and generate playlists, and song playback within the browser.
- Hosted through MongoDB Atlas, AWS Lambda, and Github Pages.

Faster R-CNN for ASL Object Detection **PyTorch, Scikit**

- Implemented a Faster R-CNN from scratch to classify ASL signs from a dataset of hand gestures.
- Fed images through a VGG-16 to generate region proposals and feature maps for each image. Fed the region proposals through an RPN (Region Proposal Network) and performed ROI cropping and pooling to generate classifications for each image.

Leadership

Eta Kappa Nu - EECS Honors Society **Ann Arbor, MI**
Activities Officer *June 2022 - January 2023*

- Organized and deliberated on chapter-wide social events with the purpose of increasing active member attendance and fostering a sense of community within the group of potential candidates for membership. Communicated with other honor societies and EECS-focused organizations in order to hold joint events.
- Mentored a group of potential candidates through balancing membership requirements and academic rigor.

Skills & Additional Information

- **Languages:** Python, GoLang, Javascript, C++/C, HTML/CSS, C#, Swift, SQL
- **Backend/Infrastructure:** Node.js, Docker, Kubernetes, GraphQL, AWS, Kafka, Flask **Database:** MongoDB, PostgreSQL **Frontend:** React, Bootstrap, SCSS **AI/ML:** Pandas, PyTorch, Matplotlib, Scikit
- **LinkedIn:** https://www.linkedin.com/in/christopher-lin-5220a6202/
- **Github:** https://www.github.com/clin155/