Alexander Chou

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Experience

Guidewire Software May 2023 – Aug 2023
Software Engineering Intern *Exton, Pennsylvania*

- Developed full-stack, LLM-powered, Slack-integrated chatbot to answer questions regarding product documentation.
- Built and tested key API endpoints bridging Slack with MongoDB.
- Devised and implemented techniques including cosine similarity-based filtering (*99%* of irrelevant queries caught) and semantic caching to optimize answer quality and improve chatbot performance (*50x* answering speed improvement).
- Volunteered to transition to Java backend product development team after 8 weeks and pioneered the implementation of a multicurrency data synchronization feature for policy payment plan changes.

Childhood Cancer Society March 2023 – May 2023
Software Engineering Intern (Part-time) *Remote*

- Contributed to continuous improvement initiatives for CCS's website using Javascript, HTML, and CSS.

Education

The University of Pennsylvania Jan 2022 – Dec 2023
Master's degree, Computer Science and Information Technology *GPA: 3.9/4.0*

- *Courseload:* Networked Systems, Computer Systems Programming, Operating Systems, Artificial Intelligence, Machine Learning, Data Structures & Software Design/Architecture, Algorithms & Computation, Big Data Analytics, Software Development, Discrete Math

The University of Texas at Austin Aug 2014 – May 2019
Bachelor of Science, Mechanical Engineering (+2 Engineering Co-ops) *GPA: 3.6/4.0*

Projects

Key Factors Behind Employee Attrition | *Python, scikit-learn, tensorflow, matplotlib*

- Conducted in-depth analysis of the IBM HR Analytics dataset to identify key factors contributing to employee attrition. Included data cleaning, preprocessing, EDA, and various visualization techniques.
- Utilized a diverse range of machine learning models (Random Forest, Logistic Regression, deep learning) to identify significant predictors and achieve improved prediction performance.

Full-Stack Image Recognition App | *React, Express, Node, Postgres*

- Developed a full-stack web app that allows users to perform image data labeling using the Clarafai API.
- Implemented a user-friendly interface that allows users to easily create accounts, upload images, and receive/store accurate image labeling results.

LC4 Assembler/Loader | *Valgrind, C, Assembly*

- Developed an assembler in C to translate commands from the Little Computer 4 (LC4)'s ISA into a binary executable for processing.
- Created a loader that converts binary executables back into commands, labels, and various data sections, utilizing a linked list for visualization on the LC4.

ns-3 Routing Protocol Implementation | *C++, Network Simulation, Routing Protocols*

- Designed and implemented link-state and distance-vector routing protocols in ns-3, enabling the simulation of complex network routing scenarios.
- Implemented functionality to parse network topology files, employ LS and DV algorithms for routing table calculation, and efficiently manage node and link status changes, guaranteeing real-time and precise updates for enhanced network routing simulations.

Skills & Certifications

Programming & Scripting Languages: Python, Java, Kotlin, C/C++, C#, SQL, JavaScript, Bash/zsh, Powershell
Version Control & Development Practices: Git (Platforms: GitHub, Bitbucket), Agile, Lean
Web & Cloud Technologies: Java Spring Boot, HTML, CSS, Bootstrap, React, Node.js, Flask, Express, Docker, Kubernetes, Terraform, Jenkins, Azure, GCP, AWS
Databases & Big Data: MongoDB (noSQL), Postgres (SQL), MySQL, Chroma (vector), Spark
ML/AI Libraries & Frameworks: numpy, pandas, scikit-learn, matplotlib, tensorflow, pytorch, Langchain
Certifications: The Complete Web Developer in 2023 by Andrei Neagoie (Udemy)