Vignesh Chandrasekhar

Software Engineer

https://vigneshchandrasekhar.com

EDUCATION

Bachelor of Science in Computer Science, *Minor in Business* — **Boulder, CO**
University of Colorado Boulder — **Aug 2019-May 2023**
GPA: 4.0 Major | 3.983 Cumulative
Honors: ***Summa Cum Laude***
Awards*: Professional Learning Award, Active Learning Award*

EXPERIENCE

Associate Software Engineer; *Charles Schwab – WAM ENG DATA TECHNOLOGY* — **Sept 2023 – Present**

- Fund of Funds NPI Hashing Framework
  - Assumed ownership of the hashing python code base swiftly, becoming the central point of contact
  - Streamlined on-prem infrastructure setup by crafting effective bash scripts, including tasks like mounting NAS filesystems and setting permissions in lower environments
  - Successfully migrated the hashing framework database warehouse from BigQuery to Snowflake, leading to the smooth decommissioning of BigQuery and a seamless transition to Snowflake
  - Enhanced the reliability and quality of data by optimizing Python code used in the hashing process and Snowflake queries
  - Achieved an impressive >70% coverage on unit tests, ensuring robustness throughout the framework
  - Uplifted the hashing framework to both QA and UAT environments, enabling thorough testing and validation
  - Configured Control-M jobs for seamless integration of the end-to-end pipeline ETL process, encompassing on-prem to GCP and Snowflake, as well as facilitating smooth Bamboo code deployments
  - Contributed extensively to the overall hashing pipeline by harmonizing infrastructure and code needs, resulting in a streamlined and efficient production workflow.

Software Engineer Intern; *Charles Schwab – Wealth & Asset Management Engineering* — **June 2022 – Aug 2022**

- Developed a cutting-edge governance application using Angular 9, C# .NET Core 3, and SQLServer, empowering Schwab's local governance coordinators and board members to efficiently manage architecture requests submitted by engineering and developer teams through Jira.
- Leveraged the Jira REST API to seamlessly retrieve ticket information, enabling coordinators to submit subtasks and comments to an issue effortlessly.
- Designed and developed a user-friendly and intuitive UI with multiple views, simplifying the process of searching for an issue, scheduling a review, and storing the review time in the database.
- Implemented features to assign reviewers to the review process and seamlessly record their votes in the database, enhancing the efficiency and accuracy of the governance application.
- Implemented a highly efficient 3rd Normal Form Data Model to streamline the management of personal information, review schedules, selected voters/reviewers, voting results, and stipulations. Utilized associative tables and foreign key relationships to reduce redundancy.
- Implemented an intuitive email notification system, facilitating seamless communication between architects and coordinators in various contexts, using SMTP.
- Employed route guards and Single Sign-On (SSO) authentication to ensure secure access for different WAME security groups.
- Revolutionized the governance process by automating previously manual procedures involving in-person delegation, resulting in a more efficient and streamlined workflow.

Course Assistant; University of Colorado Boulder College of Engineering

- Artificial Intelligence (CSCI 3202) — **Jan 2023 – May 2023**
  - Supporting students in learning AI concepts with Python such as path finding, Bayesian Networks, reinforcement learning, Hidden Markov Models, and game theory
- Software Development (CSCI 3308) — **Aug 2021 – Dec 2021**
  - Assisted students in building web applications using HTML, CSS, JavaScript, bootstrap, NodeJS, Express JS, Docker, PostgreSQL, REST APIs, and Heroku.

NSF-REU; National Science Foundation; Utah State University — **May 2021 – July 2021**

- Conducted research in engineering education and its applications to topics in fluid dynamics for an ONR funded project: "Mobile Instructional Particle Image Velocimetry (mI-PIV). Developed a Teach Engineering activity for a vortex generator experiment.

Technical Skills

Languages + Frameworks: C, C++, Python, SQL, JavaScript, Angular, ReactJs, NodeJS, .NET Core 3
Platforms + Services: MongoDB, Heroku, GitHub, GCP, Snowflake, Docker, Bamboo, Control - M
Course Knowledge: Algorithms, Data Structures, Software Development, Network Systems, Linux Systems Administration, Operating Systems, Database Systems, Data Science, Artificial Intelligence,, Theory of Computation, Discrete Structures, Machine Learning

Professional Certifications

Associate Cloud Engineer - *Google Cloud*
Issued Dec 2023

Projects

Optimized Health	**F**ull stack smart health web application built with NodeJS, PostgreSQL, and the Spoonacular nutrition API.
DNS Resolver	Designed and programmed a multi-threaded DNS resolver in C using synchronization methods. Scored highest multi-threaded speedup of all submissions. Part of the Operating Systems course at CU Boulder.
HTTP Web Proxy	Designed and programmed a multi-processed HTTP Web Server in C that handles simultaneous client connections, as well as keep-alive socket functionality. Servers web pages from remote hosts or from local cache within specified timeout range.
Distributed File Server	Designed and programmed a multi-threaded distributed file server that receives client requests to GET, PUT, and LIST a number of files distributed by chunks across multiple servers, and will construct the whole file as requested.