

# Vignesh Chandrasekhar

Software | Data | DevOps | Cloud | Architecture

[Website](#)

## EDUCATION

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### *Bachelor of Science in Computer Science (Summa Cum Laude)*

University of Colorado Boulder

GPA: 4.0 Major | 3.983 Cumulative

Awards: Professional Learning Award, [Active Learning Award](#)

Courses: 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

Boulder, CO

Aug 2019–May 2023

## Technical Skills

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**Languages + Frameworks:** Python, C, C++, SQL, Bash, MongoDB, JavaScript, Angular, React, NodeJS, .NET Core

**Platforms + Services:** Google Cloud, Snowflake, Docker, Bamboo, Git

## Experience

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### *Associate Software Engineer; Charles Schwab – Wealth Asset Management*

Sept 2023 – Present

- Fund of Funds NPI Hashing Framework
  - Assumed ownership of the hashing python code base swiftly, becoming the central point of contact
  - Implemented encryption and decryption of the data files from on-prem to Google Cloud Storage
  - 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 >70% coverage on unit tests, ensuring robustness throughout the framework
  - Uplifted the hashing framework to QA, UAT, and production, 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

### *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 SQL Server, 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

- Supported students in learning AI algorithms with Python such as path finding, Bayesian networks, reinforcement learning, alpha-beta pruning, and HMMs

#### *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 (ml-PIV). Developed a Teach Engineering activity for a vortex generator experiment.
- Selected from 10% of all applicants by NSF

## Professional Certificates

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### *Google Cloud Platform*

- [Professional Cloud Architect](#) (Issued Feb 2024)
- [Associate Cloud Engineer](#) (Issued Dec 2023)

### *Snowflake Computing*

- [SnowPro Core Certification](#) (Issued April 2024)

## Projects

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### *DNS Resolver*

Designed and programmed a multi-threaded DNS resolver in C using thread synchronization methods. Scored highest multi-threaded speedup of all submissions

### HTTP Web Proxy

Designed and programmed a multi-processed HTTP Web Server in C to handle simultaneous client connections, as well as keep-alive socket functionality, that 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 reconstruct the file requested by the client.

### Optimized Health

Full stack smart health web application built with NodeJS, PostgreSQL, and the Spoonacular nutrition API.