

# Vignesh Chandrasekhar

## Software Engineer

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### 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](#)

Coursework: 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

### Experience

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

Sept 2023 – Present

- Fund of Funds NPI Hashing Framework
  - Assumed ownership of the hashing python code base within 2 weeks, becoming the central point of contact for the project
  - Implemented encryption and decryption of the data files from on-prem NAS to Google Cloud Storage
  - Automated on-prem Linux infrastructure for mounting data source files and file movement directories via bash scripts and Bamboo deployments
  - 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 CI/CD pipelines to QA, UAT, and PROD, enabling thorough testing and validation

#### *Software Engineer Intern; Charles Schwab – Wealth & Asset Management Engineering*

June 2022 – Aug 2022

- Developed a governance application using Angular 9, C# .NET Core 3, and SQL Server, empowering governance coordinators to manage WAME architecture requests submitted to Jira.
- Leveraged Jira REST API for ticket information retrieval, enabling easy subtask and comment submissions.
- Designed an intuitive UI for issue search, review scheduling, and time recording.
- Implemented ticket reviewer assignment and vote recording features, enhancing application efficiency.
- Created a 3rd Normal Form Data Model for streamlined data management.
- Developed an email notification system and employed security measures for secure access.
- Automated previous manual governance procedures, improving workflow efficiency.

#### *Artificial Intelligence Course Assistant; University of Colorado Boulder College of Engineering*

Jan 2023 – May 2023

- Guided students in mastering AI algorithms using Python, including pathfinding, Bayesian networks, reinforcement learning, alpha-beta pruning, and hidden Markov models, facilitating deeper understanding and practical application through hands-on support and personalized instruction.
- Collaborated with professor to design and develop comprehensive exam questions, ensuring alignment with course objectives and enhancing the assessment process for over 200 students.

#### *Software Development Course Assistant; University of Colorado Boulder College of Engineering*

Aug 2021 – Dec 2021

- Guided students in developing full-stack web applications, utilizing technologies such as HTML, CSS, JavaScript, Bootstrap, Node.js, Express.js, Docker, PostgreSQL, REST APIs, and Heroku, fostering a comprehensive understanding of web development and deployment processes.

#### *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.
- Selected from 10% of all applicants by NSF

### Technical Skills

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

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

### 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.