Adhvik Kanagala

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Education

School of Computer Science, Carnegie Mellon University

Bachelor of Science
Computer Science
Concentration in Computer Systems, May 2024

Relevant Coursework:
- Distributed Systems
- Database Systems
- Parallel Computer Architecture and Programming
- Algorithm Design and Analysis
- Computer Security
- Machine Learning
- Writing for the Professions

Activities

ScottyLabs

Tech Project Lead, ScottyMaps

Skills

Languages (ordered by experience):
Python · Go · C++ · Standard ML · C · Erlang · Hack/PHP · Thrift · x86–64 · Typescript · OCaml · Dart · R · MATLAB

Technologies:
Git · Mercurial · Thrift · Flask · SQL · BigQuery · Unix · React · MongoDB · Flutter

Other Skills:
Teaching · Review

Work Experience

Duolingo · Software Engineer Intern, Data Refinery
May 2023 – August 2023
- Built an automated monitoring tool to help data platform area track production datasets
- Eliminated active monitoring of dataset freshness by engineers
- Built tool to visualize dependency graph for datasets used by data science team
- Engineered new way to debug low-quality datasets by data science team
- Improved sustainability of data science area's 2023 growth objectives by upgrading tooling

Meta · Software Engineer Intern, WhatsApp Business Infra
May 2022 – August 2022
- Migrated a critical billing service in WhatsApp Business backend to serverless infrastructure, reducing future development timelines on this service from weeks to hours
- Eliminated dependency on chat infra team for deployment/maintenance of business services
- Developed onboarding documentation and starter tasks for new engineers

Intro to Programming · TA, Head of Review & TA Management
Feb 2021 – Present
- Manage a team of 40+ TAs, run quality assurance, design training sessions, and provide feedback on TA performance
- Collaborate with professors to lead the review team, which provides actionable feedback on class notes, assessments, assignments, and all other student-facing material before release
- Develop practice materials, teach weekly group sessions of 5–100 students, tutor struggling students, grade assignments and assessments, hold office hours for 2+ hours per week
- Mentor 10 students each semester through a 1000–1500 line term project showcasing algorithmic complexity and visual design

Projects

Raft Consensus Algorithm · 15-440 Distributed Systems
Fall 2022
- Referenced the original research paper to simulate the Raft consensus algorithm in Go
- Designed a DFA-style peer model that implements leader election and log replication

Distributed Bitcoin Miner · 15-440 Distributed Systems
Fall 2022
- Implemented the Live Sequence Protocol, a bespoke network protocol that extends UDP
- LSP uses a server/client model to support automatic packet resending, exponential backoff, ordered message delivery
- Used LSP to build a mock distributed bitcoin miner with round-robin task scheduling

Bustub DBMS · 15-445 Database Systems
Spring 2023
- Built core features of a partially complete database management system
- Implemented a buffer pool manager, B+ tree index, SQL query executor and optimizer, and transaction-based concurrency control system with multiple isolation levels

Multi-User Dungeon (CMUD) · 15-440 Distributed Systems
Fall 2022
- Applied the actor model to develop an online text-based shell game using Go's RPC package
- Designed and implemented a scalable syncing strategy to replicate game state across distributed servers, while maintaining high availability and performance