

# Adhvik Kanagala

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## EDUCATION

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### Carnegie Mellon University

*Bachelor of Science, Computer Science, Concentration in Computer Systems*

Pittsburgh, PA

Aug. 2020 – May 2024

## EXPERIENCE

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### Pinecone

*Software Engineer, Vector Database*

June 2024–Present

New York City

- Sole engineer for customer-managed encryption keys, supporting at-rest encryption of all customer data
- Unlocked access to over \$500k ARR (and counting) in new paying customers with strict security requirements
- Reduced compute costs for global control plane, saving over \$50k per month

### Vorticity, Inc

*Software Engineer #8*

Jan 2024 – May 2024

Redwood City, CA

- Designed and built a distributed job scheduling library for self-hosted datacenter
- Eliminated explicit scheduling of compute jobs, transforming the datacenter into a serverless interface for engineers

### Duolingo

*Software Engineer Intern, Data Refinery*

May 2023 – August 2023

Pittsburgh, PA

- 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

Menlo Park, CA

- 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

## PROJECTS

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### c0c | 15-411 Compiler Design

Spring 2024

- Building a compiler for the C0 language, a Turing-complete subset of C, targeting x86-64
- Implementing all phases of compilation, from lexing and parsing to explicit x86-64 instruction generation

### 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

- Implemented a buffer pool manager, B+ tree index, SQL query executor and optimizer, and transaction-based concurrency control with multiple isolation levels

## TECHNICAL SKILLS

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**Languages:** Rust, Python, Go, C++, Standard ML, C, OCaml, Cuda, Erlang, Hack/PHP, Thrift, x86-64, Typescript

**Developer Tools:** Kubernetes, Docker, Thrift, Flask, SQL, Unix, React, MongoDB, Flutter

**Coursework:** Compiler Design, Distributed Systems, Database Systems, Parallel Computer Architecture, Algorithm Design and Analysis, Computer Security, Machine Learning, Writing for the Professions