

# Abubukker Chaudhary

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## EDUCATION

### University of Toronto

Bachelor of Applied Science - Computer Engineering, Dean's Honour List

Graduating May 2025

cGPA: 3.96/4.00

## EXPERIENCE

### Software Engineer


OrbitAI 

Jan 2024 - Present

San Francisco, CA

- Led the migration from basic VPS hosting to Kubernetes and Helm on Azure AKS. Involved implementing sharding, load balancing, CI/CD, and heavy-duty GPU pipelines for low latency inference of our ML systems.
- Developed a 0 to 1 scalable notifications pipeline using a Redis pub/sub microservice that acts as a message queue. Supports email, text, and dashboard notification channels sent via SSE.
- Engineered an in-house, scalable WebRTC video conferencing system using Elixir. Achieved ultra-low bandwidth costs and latency time using a homegrown CDN.

### Software Engineering Intern

A.I. Insurance Inc (YC W19) 

May 2023 – Sep 2023

San Francisco, CA

- Migrated **React.js** + **Node.js** core app architecture to a Next.js + TypeScript monorepo; resulting in over **1.3 million lines of code refactored**, reduced network latency and 50% reduction in production crashes
- Engineered a scalable and efficient real-time notification system capable of supporting **10,000+ concurrent connections**, by leveraging WebSockets and a Redis pub/sub message queue for data synchronization.
- Enhanced regulatory compliance with **30% faster audits** via high-performance policy tracing and logging

### Software Engineering Intern

ENCORE Lab 

May 2022 – Present

Toronto, ON

- Implementing features using Angular and TypeScript to create a open source collaborative learning environment supported by co-design with educational practitioners at UC Berkeley
- Improved our CI/CD workflow pipeline to increase repository code quality and automate development workflow **improving code-base health by 50%**
- Migrated WebSockets protocol from Firebase to utilize socket.io and Node.js to facilitate real-time collaborative learning, **reducing socket latency by an average of 20%**
- Accepted **return offer** from as a **part-time employee**; continued open-source project development

### Web Associate

IEEE UofT Student Branch 

May 2023 – Dec 2023

Toronto, ON

- Developing an open-sourced hardware sign-out website for **Canada's largest Makeathon** that incorporates user registration, item management, and team formation using React, Django and PostgreSQL
- Orchestrated cloud infrastructure deployment with Terraform and Ansible, slashing deployment time from 6 hours to just 10 minutes, a remarkable **97.2% increase in efficiency**.

## PROJECTS

### Geographical Information System

- Developed a high-performance GIS software application using C++ and GTK, implementing advanced path-finding algorithms such as A\*, Dijkstra's algorithm, and optimized solutions for the Traveling Salesman Problem
- Leveraged multithreaded programming techniques to enhance software performance, resulting in an amortized refresh rate of 30 fps and leveraged simulated annealing to **produce shortest paths in  $\leq 1$  second**

### BitTorrent Client CLI

- Created a dependency-free BitTorrent client in C++ from scratch, supporting both **UDP** and **TCP** trackers
- Implemented multithreading to enable concurrent downloads/uploads and optimized network I/O performance

### Distributed Fault Tolerant Key-Value Store

- Built Python-based Dockerized distributed key-value store with quorum replication, gossiping strategy
- Preserves causal relations for consistent results, ensuring fault tolerance, scalability, and efficient data management.

## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, JavaScript, TypeScript, SQL, MATLAB, HTML5, CSS, Bash

**Frameworks and Tools:** Angular, React, Node.js, Express.js, Django, Flask, PostgreSQL, MySQL, Terraform, Docker

**Other:** Git, Linux, DevOps, OOP, Data Structures, Algorithm Design, Distributed Systems, Operating Systems