

# CHIRAYU SHAH

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## EDUCATION

### University of Alberta

Bachelor of Science in Computer Science, Minor in Economics

Edmonton, AB

Expected: Dec 2026

- **Courses:** Software Engineering, Algorithms, Data Structures, Machine Learning, AI Algorithms, Operating Systems, Compilers
- **Honors:** Dean's Honor Roll (2024 - 2026)

## EXPERIENCE

### Software Engineering Intern (AI)

Apr 2026 – Present

Buxton Labs

Edmonton, AB

- Engineered context-aware AI capabilities by developing custom **RAG pipelines** and retrieval APIs, improving query response accuracy across multiple client-facing applications.
- Architected scalable, multi-tenant backend microservices and containerized deployment infrastructure, optimizing system throughput and resource efficiency to reliably support enterprise-level institutional clients.

### Software Engineering Intern

Jan 2026 – Apr 2026

Noble Rabbit

Edmonton, AB

- Led end-to-end Agile operations as Scrum Master for a 7-person team, managing client communications, sprint planning, and backlog updates to achieve a **100% on-time sprint completion rate**.
- Architected core full-stack modules for MarketSearchPro using React, TypeScript, Supabase, and Stripe, while establishing **88% test coverage** (Vitest/Playwright) and automated production releases via Cybera VPS and Caddy.

### Software Engineering Intern

Apr 2022 – Aug 2022

Versatile Techno

Edmonton, AB

- Accelerated deployment velocity by **40%** by architecting and executing automated CI/CD pipelines in Docker and GitLab CI, migrating manual configurations to IaC via Terraform and AWS.
- Architected high-throughput RESTful APIs in .NET Core/C# and async FastAPI microservices, optimizing SQL database query execution and connection pooling to reduce API response times by **25%** under high concurrent load.

### Software Engineering Teaching Assistant

Sept 2025 – Apr 2026

University of Alberta

Edmonton, AB

- Mentored students on software engineering principles, Git workflows, modular architecture, and debugging techniques.

## PROJECTS

### Kapsule Container Engine | SvelteKit, Rust, Tauri, Docker, Podman

- Engineered a high-performance GUI container manager using Rust, Tauri, and **bollard**, achieving zero-overhead container orchestration and real-time resource monitoring.
- Interfaced directly with **Docker and Podman Unix sockets** for byte-accurate progress tracking and stream buffering, increasing image pull success rates by **15%**.

### Campus Nest | React native (Expo), Typescript, Prisma, PostgreSQL, Supabase, OpenStreetMaps

- Launched a cross-platform housing marketplace for university students on iOS, Android, and Web with university-only authentication, listing, filtering, and map-based discovery
- Synced saved listings in real-time across all active views using change subscriptions, eliminating stale state without refresh.
- Designed a scalable PostgreSQL backend with real-time messaging, admin moderation, and storage cleanup on deletion.
- Integrated CodeRabbit to cut code review cycle times 30% by across a multi-contributor repository.

### Shadow Sound | React Native (Expo), Python, FastAPI, WebSockets, YAMNet

- Developed an accessible sound-to-haptic translation app for hard-of-hearing users, streaming 1.5s audio chunks via WebSockets to a containerized FastAPI backend with **<2s latency**.
- Classified 521 AudioSet event classes into 14 safety categories by integrating Google's YAMNet model, triggering custom haptic vibrations via Expo APIs.

## TECHNICAL SKILLS

**Languages:** Python, TypeScript, JavaScript, Rust, C/C++, C#, Java, Go, SQL, HTML/CSS

**Frameworks & Web:** React, Next.js, Node.js, Express, FastAPI, .NET Core, SvelteKit, Tailwind CSS

**AI & Systems:** RAG Pipelines, LangChain, YAMNet, Vector Embeddings, WebSockets, REST APIs, Microservices

**Cloud, DevOps & Data:** AWS (Lambda, SAM), Docker, PostgreSQL, MongoDB, Supabase, Firebase, Redis, Caddy

**Tools & Quality:** Git, Linux/Unix, Bash, SonarQube, Vitest, Playwright, PyTest, GitHub Actions