

Kushal Goel

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EDUCATION

University of Waterloo

Sep 2022 - Apr 2027

Bachelor's of Computer Science (Hons.) Co-op

Junior (3rd Year); **Cumulative GPA: 3.97/4.0**

Courses: Operating Systems, Algorithms, Data Structures, Databases, Object-oriented Programming

SKILLS

Languages: C++, C, Go, Java, JavaScript, TypeScript, Python, Dart, Swift, Bash

Tools: Next.js, ReactJS, Node.js, Express.js, Flutter, Git, AWS, PostgreSQL, MySQL, MongoDB, Jenkins, Linux

WORK EXPERIENCE

Google

Waterloo, ON

Software Engineering Intern

May 2025 – Aug 2025

- Contributing to the Secure Source Manager team at Google Cloud by **optimizing Git indexing algorithms and repository storage**, enhancing scalability and performance

Huawei

Waterloo, ON

Software Engineering Intern | Co-op Term Rating: Outstanding

May 2024 – Aug 2024

- Enhanced file security by implementing a **sandbox mechanism** using C/C++ that controls application access to files, using a specialized policy evaluation module and profile language including **15+ filters** and **20+ operations**
- Enforced kernel level **Attribute based Access Control** allowing users to define custom policies to protect their files
- Developed **Enterprise Secure Labels**, a security framework for the filesystem to protect extended file attributes using the Linux security hooks API achieving a performance impact of less than **3 microseconds**
- Optimized disk write and encryption by simulating various strategies using multithreading, **boosting speed by 20%**
- Designed a system to attach and read policy information from operating system processes using kernel programming, **reducing policy retrieval time by 30%**

PayNearby

Delhi, India

Backend Software Engineering Intern | Co-op Term Rating: Excellent

May 2023 – Aug 2023

- Revamped PayNearby's authentication infrastructure using Java and Spring Boot by consolidating scattered APIs into microservices, resulting in a **90% improvement** in authentication time
- Implemented the OTP Store API to generate, fetch, and verify one-time passwords and conducted thorough unit testing of the API using JUnit, covering **95% of the code**
- Ensured data security by implementing AES encryption using a **thread pool** for storing sensitive data in the database
- Built a Java SDK to access REST APIs using HTTP connection pooling, handling **80% more** concurrent connections

PROJECTS

RAIInet - Board Game | C++, Xlib

- Created a board game integrating the **Model View Controller** design pattern and **SOLID** design principles
- Designed a graphical display rendering PNGs using the X11 library, redrawing the board within **300 milliseconds**

CloudX - File Management Application | React, Express.js, Node.js

- Developed a feature-rich **file storage and sharing app**, with a user-friendly dashboard utilizing React Router
- Used **pre-signed URLs** with Google Cloud Storage resulting in **50% faster file transfers**, increasing server efficiency

Investo - Mutual Funds Backend Application | Python, FastAPI

- Built an application to analyze data for over **10,000** mutual fund schemes spread over **10+ years** with daily updates