Krish Kochar

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Education

University of Waterloo Sep 2022 - Apr 2027

Bachelor of Computer Science (AI Specialization) ***GPA: 3.95 / 4***

Relevant Courses: AI/ML, Concurrency, Algorithms, Operating Systems, Networks, Security, OOP, Databases, Compilers

Experience

Super.com May 2025 - Aug 2025

Software Engineering Intern

- Engineered backend services in **Python/FastAPI** for the new Flights product, helping achieve **sub-150ms** response times across booking, payment & refund flows; implemented scalable API patterns to support future growth
- Reduced fraudulent bookings by **22%** by integrating a 3rd-party fraud detection service into the **payments API**
- Automated refund dispute workflow with an **async webhook API**, removing manual handling & accelerating resolution
- Led production triage, resolving **5+** critical issues and introducing debugging workflows that halved MTTR
- Developed **React/TypeScript** components for unauthenticated website flows & improved page load speed by **25%**

OTTO Motors by Rockwell Automation Jan 2025 – Apr 2025

Software Developer Intern

- Developed a multi-fleet interoperability system in **C++**, **Python**, & **ROS2**, improving coordination across **500+** robots
- Redesigned **networking architecture** by migrating from CycloneDDS to Zenoh, reducing communication latency by **25%** & increasing data throughput by **30%**; produced benchmarks and a PoC to guide future adoption in fleet deployments
- Enhanced end-to-end communication between distributed nodes, tuning **QoS** settings to reduce packet loss in stress tests
- Replaced polling with an **event-driven ROS2** topic for real-time robot tracking, reducing CPU usage by **20%**
- Optimized **Kubernetes** images & **Helm** charts for dynamic reconfiguration, boosting deployment speed & reliability

Ford Motor Company May 2024 - Aug 2024

Platform Software Developer Intern

- Deployed a real-time Vision Compute Service in **C++** with **OpenVX** & **OpenCV**, accelerating sensor data processing & optimizing multi-threaded workloads for high-performance execution on embedded hardware
- Integrated **Gcov** into **Jenkins** CI pipelines, enabling **80%** functional test coverage visibility & unblocking QA workflows
- Built **Python** scripts for release validation and code-size tracking, surfacing inefficiencies that cut firmware size by **20%**
- Debugged & resolved **critical memory defects** with Valgrind, eliminating leaks & stabilizing production firmware

Research

University of Waterloo & Vector Institute Sep 2024 - Dec 2024

Undergraduate Research Assistant, Prof. Xi He

- Generated a 900K-record synthetic dataset (<**10%** divergence) with a ClavaDDPM **diffusion** pipeline in **Python**
- Benchmarked data privacy via black-box **Membership Inference Attacks** to assess the risks of synthetic data sharing

Projects

Oracle - Code Review Buddy | *Python, FastAPI, Cerebras, ChromaDB, Ollama*

- Built a GitHub extension that generates AI code summaries in <**1s**, helping review large PRs faster with greater context
- Implemented local vector embeddings using **ChromaDB** to enable semantic search, boosting snippet retrieval accuracy

RaIInet | *C++, Xlib, UML*

- Designed a **C++** board game with the **MVC** architecture, using **OOP** and **SOLID** principles for modularity & scalability

Finvest Advisor | *Python, Streamlit, Pandas, NumPy*

- Built a **Python** app using the Cosine Similarity algorithm, achieving **90%** Precision@3 in investment recommendations

Technical Skills

Languages: Python, C++, Rust, Go, SQL, TypeScript, JavaScript, Bash

Systems & Tools: Docker, Kubernetes, Helm, Jenkins, Git, Redis, Snowflake, Datadog, GTest

Frameworks & Libraries: ROS2, OpenCV, FastAPI, React, Node.js, Pandas, NumPy, Scikit-Learn, TensorFlow, PyTorch