

Khush Mittal

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Skills

AI & Generative AI: LLM Prompt Engineering, RAG, Gemini, Claude, ChatGPT, Microsoft Copilot, TensorFlow, scikit-learn

Languages & Web: Python, TypeScript, Go, SQL, HTML, CSS, C++, Java

Data & Analytics: Power BI, Tableau, Excel, Pandas, NumPy, Data Cleaning & Validation, KPI Tracking & Reporting

Backend & Tools: Node.js, REST APIs, PostgreSQL, Git, Docker, Google Cloud Platform, Automation Anywhere (RPA)

Education & Research

University of Waterloo

Waterloo, ON

Bachelor of Computing and Financial Management, Minor in Economics

Expected December 2027

- **Velocity Innovation Challenge — Finalist:** Designed a VR- and 5G-enabled banking concept selected as a top-5 finalist; pitched to Unity Technologies, BMO, and Rogers.
- **Certifications:** Microsoft Azure Fundamentals (AZ-900) · Bloomberg Market Concepts (BMC) · CFA Level I Candidate

Research Assistant — Waterloo IR Group (Prof. Jimmy Lin)

2026 – Present

Information Retrieval & Applied NLP Research

Waterloo, ON

- Contributed merged pull requests to *Anserini* and *Pyserini* by reproducing BM25, dense (BGE-base), and learned-sparse (SPLADE-v3) retrieval baselines on MS MARCO, broadening the group's retrieval reproducibility pipeline.

Professional Experience

Mitsubishi Heavy Industries (Aerospace)

Apr 2026 – Present

Web Developer Intern — Technology & Operations

Canada

- Eliminated a recurring manual step for the operations team by designing an LLM-assisted workflow that auto-generated standardized, brand-compliant email templates from structured campaign briefs and dispatched them via the existing mail system.
- Streamlined reporting workflows by building modular React/TypeScript internal applications with reusable HTML/CSS components, reducing report turnaround time and enabling consistent, responsive interfaces across engineering and operations teams.
- Improved operational data reliability by developing Node.js REST APIs with schema-level request validation and structured error handling, replacing ad-hoc manual processes and enabling cross-functional teams to access clean, documented data endpoints.

AgroFood Grains

May 2025 – Aug 2025

Financial Analyst Intern

Remote

- Reduced month-end reconciliation discrepancies by ~30% by designing validation controls to reconcile transaction-level data across 4 business units simultaneously, consistently delivering clean books under tight close deadlines.
- Accelerated monthly decision-making for senior leadership by building supporting schedules with automated cross-checks in Excel, producing accurate reporting packages used directly in budget reviews and executive presentations.

Grant Thornton Ltd

Jun 2024 – Sep 2024

Audit Intern

Remote

- Reduced close-cycle errors by reviewing 100+ audit reports and processing 50+ monthly journal entries in Tally, surfacing variance summaries and documented exceptions that were formally adopted by the engagement team.

KIA Motors

May 2023 – Aug 2023

Operations & Analytics Intern

India

- Cut manual processing time during an ERP rollout by building 12 RPA automation rules in Automation Anywhere that standardized recurring management reporting workflows, eliminating manual handoffs and reducing processing errors across teams.
- Enabled faster data-driven decisions by designing and deploying Power BI MIS dashboards with real-time KPI tracking, drill-through filters, and automated data refresh across multiple departments and reporting lines.

Projects

AI-Powered Personal Finance Assistant (Pocket)

Go, LLM Prompt Pipeline, Gemini, PostgreSQL, Redis, Plaid API, Docker

- Designed and fine-tuned a multi-stage LLM prompt pipeline that injects live financial context — balances, transactions, and budgets — into Gemini to generate structured, schema-compliant responses enforcing consistent and production-ready output.
- Surfaced overdraft-risk warnings and spending insights by building a Go REST service with JWT authentication, rate limiting, and documented prompt templates, instrumenting usage monitoring to track response quality KPIs over time.
- Enabled reproducible deployment by containerizing a PostgreSQL and Redis stack with Docker, shipping through a CI/CD pipeline with automated tests, and maintaining versioned prompt templates and architecture docs throughout the build.

Distributed Task Scheduler

Go, PostgreSQL, Redis, Docker

- Engineered a distributed job scheduling engine with priority queues, worker-pool concurrency, and Redis-backed state management, ensuring reliable at-least-once task execution under concurrent load.
- Exposed a REST API for task submission, status tracking, and real-time KPI monitoring; containerized with Docker Compose for reproducible local and production deployment.
- Documented system architecture end-to-end — component diagrams, setup guide, and environment configuration — mirroring production engineering standards.