

ASHMITA MITTAL

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Education

University of Waterloo, ON, Canada
Bachelor of Computer Science (Honours), Co-op

Sep 2020 - Present
May 2025

Skills

Languages: Java, C++, C, Python, HTML/CSS, Racket, JavaScript, Cypher

Frameworks: React, Flask, Django, MERN, Bootstrap

Tools: Neo4j, SQL, Selenium, BeautifulSoup, Linux, Git, Jinja, NumPy

Work Experience

Data² (USA Inc.)

Sep – Dec 2023

Software Engineering Co-Op — Remote

- Co-inventor of a pending **patent** on large language models, AI agents, and innovation in knowledge graph technology
- Engineered an adaptive entity loader for **knowledge graphs**, integrating GenerativeAI, LLM, and technologies like llamaIndex, langchain, AWS Bedrock, and OpenAI
- Innovated **GenAI prototype** development, showcasing expertise in advanced graph technologies and AI-driven analysis
- Utilized front-end graph visualization tools, rapidly prototyping user interfaces for enhanced data representation

Royal Bank of Canada

Jan – Apr 2023

DevOps Developer Co-Op — Toronto, ON

- Refactored **Renovate** (Dependency Management Tool) deployment processes using **OCP** deployment templates, **GitHub** App integration, secret management, and configuration management
- Contributed an updated Renovate repo to RBC's **open-source community**, achieving **100%** adoption across tech teams
- Optimized **CI/CD** pipeline stage data collection for the DORA dashboard and integrated it with Elasticsearch
- Leveraged **SonarQube** and JaCoCo to place unit test coverage checks, preventing code contributions without proper testing

Migrations.ml Inc.

May – Aug 2022

Software Developer Co-Op — Toronto, ON

- Designed microservice for real-time credit risk inference (950 issuers) with **JAX**, **NumPy**, and **pandas**
- Developed compact chart.js visuals for 9000 corporate bonds, showcasing credit analytics
- Built a responsive **gRPC/protobuf** API for React frontend, optimizing data models with Alembic for **Google Cloud SQL**
- Orchestrated services using **Kubernetes**, **Docker**, and **Airflow**, improving agility and scalability

Microsoft - Azure & Artificial Intelligence Fundamentals

May – Aug 2021

Project Team Member — Waterloo Experience (WE) Accelerate Program - Waterloo, ON

- Utilized **Azure** and **AI** fundamental skills to propose enhanced accessibility solutions addressing important **global issues**
- Suggested an **80%** more efficient AI-powered solution, outperforming competitor alternatives in real-time response
- Collaborated on a solution leveraging AI and **ML** for architect assistance in designing inclusive aesthetics for new projects
- Gained a comprehensive understanding of critical issues through intensive research and gap analysis

Nodwin Gaming

May – Aug 2021

Software Developer Co-Op — India

- Elevated user satisfaction with the DreamHack 2021 **website prototype** optimizing event management and admin features
- Contributed on a robust **Django** backend and integrated data collection API for anti-cheat league mobile app
- Architected a data-querying dashboard interface for league admins to access player details seamlessly

Projects

- Sudoku Puzzle Image Solver** | Python [🔗](#)
Transformed Sudoku puzzle images into solved boards using **OpenCV** and advanced **AI search techniques**
- Battle Snake Tournament** | Python [🔗](#)
Applied **A* search** algorithm for food search and opponent detection, ensuring optimal decision-making in a team
- Dreamhack project** | React & Flask [🔗](#)
Developed a prototype for an esports tournament player's ticket booking
- Research Assistant** (University of Waterloo - Political Science) — Mis/Disinformation Research Project

Achievements

• Microsoft AI & Azure fundamentals • President's Scholarship • Student Leadership Program (UW) • Trinity College London (Distinction) - Speech & Drama; Communication Skills • Cultural and Education Exchange (India - Netherlands)