

Dipen Kumar Maheshwari

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EDUCATION

University of Alberta

Bachelor of Science Honors in Computer Science

Edmonton, AB

Expected: May 2027

Relevant Coursework: Software Engineering, Data Structures & Algorithms, Relational Database Management, Machine Learning, Artificial Intelligence

EXPERIENCE

SAP | Machine Learning Engineer Intern

Vancouver, BC | Jan 2025 – Present

- Engineered a data pipeline to process over 38,000 partner tickets using Python and PySpark on Azure Databricks.
- Decreased data analysis volume by 85% by developing a semantic deduplication module with Sentence Transformers and FAISS.
- Designed an LLM-based ticket categorization system with GPT-4o/Gemini, LangChain, and Pydantic, projected to reduce manual triage time by 60%.
- Architected a Map-Reduce RAG pipeline with Python, LangChain, and Pydantic for automated document summarization, boosting summary factuality to over 70%.
- Improved enterprise RAG system relevance by implementing a dual-indexing retrieval pipeline with ColBERT and LangChain for late-interaction search.

University of Alberta | Software and Research Intern

Edmonton, AB | May 2024 – June 2024

- Reduced development environment setup time by 50% by containerizing autonomous systems with Docker and Linux.
- Improved code maintainability and stability by refactoring core navigation systems in Python, C++, and ROS.
- Implemented Git and GitHub version control workflows, improving team collaboration and code quality.

PROJECTS

Hooked/ai | FastAPI, TypeScript, Next.js, Python, Cohere API, Modal GPU, AWS S3, Inngest, SQLite | [GitHub](#)

- Developed an automated podcast-to-short-form video conversion full-stack platform in Next.js and TypeScript, reducing video editing time by 95%.
- Architected a multi-stage AI pipeline for viral moment detection using Python, Cohere API, and WhisperX.
- Built serverless backend with Python, FastAPI, and Modal for GPU-accelerated video processing.
- Deployed an event-driven architecture using Inngest and AWS S3 for scalable storage and asset management.

Slacked - CI/CD Notifier | Go, AWS (Lambda, API Gateway), AWS CDK, Jenkins | [GitHub](#)

- Built a decoupled CI/CD notification microservice to automate real-time build status updates in Go.
- Deployed the service to a serverless AWS architecture using Lambda and API Gateway, enabling robust, event-driven processing of Jenkins payloads.
- Provisioned cloud infrastructure using AWS CDK (Infrastructure as Code) and securely managed API tokens and credentials with AWS Secrets Manager.

SpotLotto - Event Lottery System | Java, Android Studio, Firebase, JUnit, Git, GitHub, XML, MVC | [GitHub](#)

- Engineered a multi-role (user/organizer) Android application for a lottery-based event system using Java and Firebase.
- Led a 6-member Agile team, implementing real-time push notifications with FCM and achieving 50% test coverage with JUnit through TDD.
- Integrated Google ML Kit QR scanning with geolocation-based event registration to prioritize nearby attendees.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Go, Java, C, SQL, HTML/CSS

Frameworks/Libraries: Next.js, React, Node.js, LangChain, Pandas, NumPy, Flask, PyTorch

Cloud & Tools: Git, GitHub, Docker, Azure Databricks, AWS, Firebase, PostgreSQL, MongoDB, Linux, Jira

Concepts: Full-Stack Development, Backend Development, Frontend Development, RAG, Machine Learning, CI/CD, Cloud Computing, Agile, API Design