

# Dipen Kumar Maheshwari

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## EDUCATION

### University of Alberta

Bachelor of Science Honors in Computer Science

Edmonton, AB

Sep 2022 - Dec 2026

**Relevant Coursework:** Software Engineering, Data Structures & Algorithms, Relational Database Management, Machine Learning, AI

## EXPERIENCE

### Machine Learning Engineer Intern

Jan 2025 – Present

SAP

Vancouver, BC

- Developing an unsupervised **NLP model** to analyze and categorize partner tickets based on semantics, using **transformers** like **SBERT** and integrating these models into scalable, production-grade API endpoints expected to **reduce ticket approval time by 60%** through automated categorization and prioritization.
- Conducting extensive **exploratory data analysis (EDA)** on **Azure Databricks** to understand ticket distribution patterns, refine feature engineering, and enhance clustering effectiveness.
- Maintaining **comprehensive documentation** for model development, data preprocessing steps, and decision rationale to ensure reproducibility and knowledge sharing.
- Collaborating with cross-functional teams in an **Agile environment** to align the ML model with **business needs** and integrate findings into ticket management workflows.

### Software and Research Intern

May 2024 – June 2024

University of Alberta - ANCL

Edmonton, AB

- Led the **containerization** of autonomous navigation systems using **Docker**, reducing development environment setup time by **50%** and boosting system reliability.
- Refactored autonomous navigation algorithms in **ROS**, **Linux**, **C++**, and **Python**, improving code readability and reducing runtime errors.
- Applied version control with **Git** and **GitHub**, implementing branch protection rules and **PR review processes** that reduced merge conflicts by **40%**.

## PROJECTS

### SpotLotto - Event Lottery System | *Java, Android Studio, Firebase, JUnit, Agile, Git, GitHub, CI/CD* | [GitHub](#)

- Built an Android app using **Java** and **Firebase** for real-time data management, geolocation verification, and user interactions, achieving 95% test coverage with **JUnit** through test-driven development and design patterns.
- Led a **6-member Agile team**, conducted requirements analysis, **UML modeling**, and implemented CI/CD pipelines for iterative improvements, ensuring streamlined development and deployment.

### UniWays - Google Hacks Winner | *Next.js, React, TypeScript, Prisma, PostgreSQL, Google Maps APIs* | [GitHub](#)

- Built a full-stack campus navigation app with **Next.js**, **React**, and **TypeScript**, reducing student travel time by **20%** via **Google Maps API** and real-time route optimization.
- Designed **REST APIs** with **Prisma** and **PostgreSQL**, optimizing data access and enhanced security with **OAuth**.

### Bloom.ai | *Next.js, React, TypeScript, NextAuth, TailwindCSS, MongoDB, Zod, Gemini-AI API* | [GitHub](#) | [Live](#)

- Developed an **AI-powered** anonymous full-stack feedback platform, reducing message composition time by **40%** through **Gemini-AI LLM** integration.
- Developed a secure backend authentication system using **MongoDB**, **NextAuth**, and **Zod**, improving user authentication reliability and validation efficiency.

### Classification on NotMNIST-RGB and NotMNIST DL using CNN | *Python, PyTorch* | [GitHub](#)

- Engineered a convolutional **neural network deep learning model** with modified **LeNet architecture**, achieving **97.5%** accuracy in image classification; optimized **object detection** on NotMNIST-DL dataset to **82.8%**.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, Java, Go/Golang, C/C++, SQL, NoSQL, HTML, CSS

**Frameworks/Libraries:** React.js, Next.js, Node.js, Express.js, Tailwind CSS, LangChain, Numpy, Pandas, PyTorch

**Developer Tools:** Git, GitHub, VS Code, Android, Linux/Unix, Docker, Azure Databricks, JUnit

**Databases:** MySQL, SQLite, MongoDB, Firebase, PostgreSQL