

# Dipen Kumar Maheshwari

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## EDUCATION

### University of Alberta

Bachelor of Science Honors in Computer Science - (GPA: 3.6 - First Class Standing)

Edmonton, CA

Sep 2022 - May 2026

**Relevant Coursework:** Software Engineering, Data Structures & Algorithms, Object Oriented Programming, Relational Databases Management, Machine Learning, Artificial Intelligence, Python and Systems Programming, Computer Organization and Architecture, Linear Algebra, Statistics, Image Processing (Computer Vision)

## WORK EXPERIENCE

### Software and Research Intern

May 2024 – June 2024

University of Alberta - ANCL

Edmonton, AB

- Developed and deployed **Docker-based containerized solutions**, reducing setup time by **50%** and boosting system reliability.
- Optimized and debugged autonomous navigation algorithms in **ROS, Linux, C++**, and **Python**, enhancing performance and scalability.
- Applied **Git** and **GitHub** version control best practices, facilitating collaborative development, efficient project tracking, communication, and streamlined CI/CD workflows.

## PROJECTS

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

- Building an Android Event Lottery app with **Java** and **Firebase** for **real-time data**, geolocation verification, and user management.
- Leading a **6-member Agile team**, conducting requirements analysis, UML modeling, and implementing **CI/CD pipelines** for fast, iterative improvements.
- Implemented **test-driven development** achieving **95%** testing coverage using **JUnit**, enforcing code quality through design patterns and code reviews.

### 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** database, enabling efficient pathfinding and user-centric data access.
- Enhanced security with **OAuth** and created a responsive interface using TailwindCSS.

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

- Developed a production-ready, secure **anonymous** full-stack feedback platform with **AI-powered suggestions**, reducing message composition time by **40%** through **Gemini-AI LLM** API integration.
- Built a robust backend with **MongoDB** and **NextAuth**, implementing middleware for **30% faster** authentication, type validation with **Zod**, and a responsive UI using TailwindCSS.

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

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

### SurfWeb RAG-Based Web Interaction Tool | *Next.js, JavaScript, Redis, Vector, Vercel AI, TailwindCSS* | **GitHub** | **Live**

- Created a scalable **ML** web application for chat-based site interaction using **Redis** and **vector databases** for efficient content retrieval.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript, TypeScript, Java, C/C++, Go, RISC-V Assembly, SQL, NoSQL, HTML, CSS

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

**Developer Tools:** Git, Github, VS Code, Android, Linux/Unix, Docker, AWS, JUnit, Selenium, Postman

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

## HONORS AND AWARDS

1st Place Winner - GHacks Hackathon (UniWays)

Dean's Honor Roll - University of Alberta

International Admission Scholarship & Regional Excellence Scholarship - University of Alberta

2024

2023-24

2022