

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: Python and Systems Programming, Databases, Software Engineering, Object Oriented Programming, Computer Organization and Architecture, Machine Learning, AI, Data Structures & Algorithms, Linear Algebra, Statistics, Image Processing

EXPERIENCE

Software and Research Intern

University of Alberta - ANCL

May 2024 – June 2024

Edmonton, AB

- **Led the development and collaborated with cross-functional** teams to deliver containerized solutions using **Docker**, reducing setup time by **50%**.
- **Tested and debugged the structure and readability** of autonomous navigation algorithms code using ROS, Linux, and C++, ensuring code scalability and readability.
- Applied test-driven development and version control best practices using **Git** and **GitHub**, enabling seamless team coordination and effective project management.

PROJECTS

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

- **Led a team of three** to build a **full-stack campus navigation app** using Next.js, React, and TypeScript, significantly reducing students' travel time by up to 20% with **Google Maps API integration** and pathway suggestions.
- Designed **REST API architecture** for handling user schedule data and efficient mapping queries, integrated with a Prisma-managed PostgreSQL database.
- Implemented **secure user authentication** with Clerk OAuth and built a responsive interface using TailwindCSS, enhancing user experience with **precise geocoding**.

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

- Developed a **full-stack Anonymous Feedback/Messages web application** with **AI-powered message suggestions** using Google's Gemini-AI API, built with Next.js, React, and TypeScript.
- Implemented robust backend with MongoDB for data persistence, **leveraged NextAuth for secure authentication**, custom server middleware for enhanced security, and Zod for type validation, while crafting a responsive UI using Tailwind CSS and shadcn/ui

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

- Engineered a **modified LeNet CNN deep learning model for high-accuracy classification**, achieving 97.53% accuracy through optimized architecture and weight initialization for **large-scale datasets**.
- **Enhanced object detection** using sliding window detection on the NotMNIST-DL dataset, achieving a detection accuracy of 82.8% and classification accuracy of 97.53%.

SurfWeb RAG-Based Web Interaction Tool | [Next.js](#), [Redis](#), [Vector](#), [Vercel AI](#), [Tailwind CSS](#) | [GitHub](#) | [Live](#)

- Designed and implemented a **scalable ML Web application** enabling users to interact with any website via chat-based queries, utilizing **custom vector databases and Redis with Upstash** for high speed data access.
- Leveraged Tailwind CSS for UI design and Vercel AI SDK to enhance the user experience, facilitating efficient content retrieval and interaction across diverse websites.

AudioScribe | [React](#), [HTML](#), [Tailwind CSS](#), [Hugging Face Models and Transformers](#) | [GitHub](#) | [Live](#)

- Developed a dynamic web application for **real-time audio transcription and translation** using React and **Hugging Face NLP models**, with efficient processing via Web Workers and a responsive interface built with Tailwind CSS.

TECHNICAL SKILLS

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

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

Developer Tools: Git, Github, VS Code, PyCharm Redux-Toolkit, Postman, Linux/Unix, Docker

Databases: MySQL, SQLite, MongoDB

HONORS AND AWARDS

University of Alberta - Faculty of Science - Dean's Honor Roll

2023-24

University of Alberta - International Admission Scholarship & Regional Excellence Scholarship

2022