

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

Summer Software/Research Intern

May 2024 – June 2024

University of Alberta - ANCL

Edmonton, AB

- Led autonomous development and collaborated with cross-functional teams to implement containerized solutions using **Docker**, **reducing setup time by 50%**.
- Improved and debugged the structure and readability** of autonomous navigation algorithms using ROS, Linux, and C++, ensuring code scalability and readability.
- Applied 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 develop 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.
- Implemented secure user authentication via Clerk **OAuth**, enabling **secure login and personalized schedules**, stored in a Prisma-managed PostgreSQL database.
- Designed a user-centric, responsive interface**, using TailwindCSS, enhancing user experience with **geocoding for precise location mapping**.

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

- Developed a **full-stack web application** for anonymous feedback 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 shaden/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** on the RGB NotMNIST dataset, achieving 97.53% accuracy through optimized architecture and weight initialization.
- 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 efficient data retrieval.
- 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 NLP/ML Web application for real-time audio transcription and translation, **leveraging advanced NLP models from Hugging Face** and React with Web Workers for efficient processing.
- Designed a responsive, user-friendly interface allowing seamless audio content transcription and translation with high accuracy.

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