

ADVAY SINGH

☎ (425)443-1821 ✉ advay@umich.edu [in](#) [Linkdin](#) [github](#) [advaysingh1.github.io](#)

Education

University of Michigan

Ann Arbor, MI

Bachelors of Science in Computer Science, 3.925 GPA

Expected - May 2026

- **Selected Coursework:** Data Structures and Algorithms, Practical Data Science, Computer Architecture, Linear Algebra, Discrete Mathematics, Multi-variable Calculus, Probability and Statistics, Academic Writing
- **Awards:** Branstorm Freshman Prize, William and Mary Jo MacDonald Scholarship, Clement Muller Leadership Award

Technical Skills

Languages: Python, C++, JavaScript, Typescript, C, Java, HTML, CSS, SQL, Bash

Developer Tools/Frameworks: React, SvelteKit, Next.js, Auth.js, BeautifulSoup, GitHub, Azure DevOps, PowerBI, Monday API, Jira, MacOS, NumPy, Pandas, Tensorflow, PyTorch, Excel, Linux, Node.js, RestAPIs, GraphQL

Experience

Embedl

Remote

Web Developer

June 2024 - August 2024

- Spearheaded the creation of an end-to-end user portal featuring custom authentication and authorization controls, establishing the foundation for secure client interactions with the Neural Network optimization SDK. .
- Architected API endpoints using FastAPI for streamlined SDK documentation, and crafted interactive machine learning demos for the website, enhancing user engagement.
- Led full-stack engineering efforts, integrating a PostgreSQL database with a SvelteKit, Tailwind CSS, and Vite front-end, delivering a cohesive and responsive user experience.

American College of Emergency Physicians (ACEP)

Dallas, TX

IT Big Data Analytics Intern

May 2024 - June 2024

- Orchestrated the automation of the ETL pipeline by scripting in Python, leveraging the Monday API and GraphQL for data scraping, which significantly improved data integrity and transformed data management practices.
- Engineered robust data acquisition strategies, utilizing advanced querying and manipulation techniques to maximize the efficacy of CEDR's data analysis framework.
- Integrated Azure DevOps for version control and CI/CD workflows, agile project tracking with Jira, and developed insightful dashboards using PowerBI for enhanced data visualization and reporting.

Projects

ProveIt

June 2024

- Engineered "ProveIt," a robust platform for academics to share and collaborate on LaTeX proofs, implementing Firebase for back-end services such as real-time WebSockets for dynamic content updates and secure authentication handling with SSR (Server-Side Rendering) and CSR (Client-Side Rendering) strategies. .
- Orchestrated efficient payload management and responsive UI/UX design using SvelteKit with Tailwind CSS, ensuring swift and seamless content delivery and interactive proof editing.

Hindi-Chalkboard NN-From-Scratch

April 2024

- Designed and developed of the Hindi-Chalkboard full stack application, crafting a bespoke multi-layer neural network from the ground up using Python with advanced numerical computations through Numpy and data manipulation via Pandas, enhanced by a Node.js-based web hosting environment to provide an interactive user interface. .
- Conducted a rigorous study and practical application of neural network mathematical foundations, including gradient descent algorithms, partial derivatives, and extensive matrix operations, which facilitated a robust understanding of deep learning concepts and solidified the project's core AI mechanics with efficient back-propagation techniques.

Decision Support System for Skin Disorders

Apr 2022

- Languages and technologies: Python, HTML, Google Colab, Jupyter Notebook, Tensorflow, Xcode.
- Research focused on the facilitation of skin disorder diagnosis through ML rather than clinical prognosis. Employed pre-existing, multi-layered Convolutional Neural Networks fine-tuned for HAM10000 dataset.
- Discovered numerical concepts behind convolution, pooling, and feature detection. Accessed pre-trained CNNs (DesNet, AlexNet, etc.)