Denisha Madhura

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Experience

IIT BHU Feb 2025 – Present
AI Research Intern *Remote*

- **Clinical AI Integration:** Architecting an intelligent GUI designed to serve as a medical assistant, streamlining clinical workflows through seamless AI integration.
- **Neural Data Classification:** Researching the application of machine learning models for the classification of complex fMRI data to assist in the diagnosis of neurodevelopmental conditions.

Google Developers Group on Campus Sept 2025 – Present
Data Science Team Member *Chennai, India*

- Contributed to team-based **AI/ML projects**, applying core data science principles to develop and deploy models.
- Actively participated in workshops focused on **TensorFlow**

IEEE Computer Society Sept 2025 – Present
Technical Team Member *Chennai, India*

- Developed and maintained key features for the chapter's official website using the **NextJS** to improve user engagement and information delivery.
- Collaborated with a team on **Web Development projects**, focusing on responsive design and performance optimization.

CodeChef VIT Chennai Chapter Jan 2025 – Present
Chennai, India

- *Social Media and Content Writing Lead* (Jun 2025 – Present): Led content strategy for LinkedIn, getting 8k+ impressions , managing and creating engaging, platform-specific content.
- *Web Development Team Member* (Feb 2025 – Aug 2025): Developed multiple **UI/UX prototypes** for internal tools using **Figma** and Dora ai, incorporating **3D Modeling** via Sketchfab.
- *Content Specialist* (Jan 2025 – Jun 2025): Authored and edited technical and event-related content for monthly newsletters, streamlining workflow by managing source material originally written in **Markdown**.

Education

Vellore Institute of Technology, Chennai Campus Chennai, Tamil Nadu
B.Tech. in Computer Science and Engineering (Specialization in Cyber Physical Systems) *July 2024 – Aug 2028*

Indian Institute of Technology, Madras Chennai, Tamil Nadu
B.Sc. in Data Science and Applications (Online Degree Program) *June 2024 – May 2027*

Manav Rachna International School, Sector 14 Faridabad, Haryana
High School (CBSE) *April 2018 – April 2024*

- School Topper in English (Class 12)
- School Topper in Social Science (Class 10)

Projects

Gosh - The Go Shell | *Go, Shell* Jan 2026

- **Developed a POSIX-compliant shell in Go**, implementing core system functionalities including process management, environment variable handling, and native support for Unix built-ins like cd, pwd, and type.
- **Engineered a robust command parser** capable of handling complex string logic, including single/double quoting and escaped characters, ensuring accurate argument processing for external binary execution.
- **Implemented I/O redirection mechanisms** for standard output, error, and input (¿, ¿¿, 2¿, ¡), enabling efficient data stream management and file system interaction within the shell environment.
- **Optimized system path resolution** to dynamically locate and execute binaries across the PATH, while maintaining a lightweight architecture focused on low-latency execution and minimal memory overhead.

Autonomous Driving Simulation with Genetic Algorithm | *JavaScript, Neural Networks* Sept 2025

- Engineered an end-to-end autonomous driving simulation, developing **from-scratch physics** (vector math) for realistic acceleration, braking, and steering.
- Developed and integrated a **custom neural network** as the car's "brain," processing real-time input from **virtual ray sensors** to control movement.
- Implemented a **Genetic Algorithm** for training, evolving the neural network's weights through generations of natural selection to autonomously navigate the road.
- Designed the application as a single-file environment, containing all rendering logic, physics, sensing, and machine learning components.

Assistive Robot for Visually Impaired | *Arduino, Sensor Integration* Jan 2025 – Apr 2025

- Engineered a mobile assistive robot for visually impaired users, focusing on **real-time object and edge detection** for safe navigation.
- Developed the core sensing system by integrating **IR sensors for edge detection** and **ultrasonic sensors** for reliable obstacle avoidance.
- Designed and programmed a **reactive navigation system** that automatically halts motion and provides audio feedback (beeping) upon obstacle detection.
- Enhanced user accessibility by integrating a voice command feedback mechanism using the **Google Text-to-Speech (TTS) API**.

Technical Skills

Languages: Python,Go, Rust C/C++, SQL (MySQL, Oracle, PostgreSQL, SQLite), Astro
Developer Tools: Git, Figma, Markdown, Neo4j, Postman, Google Cloud
Libraries: Pandas, NumPy, Matplotlib, Scikit-learn, React, Next.js, FastAPI