NISHCHAL PR

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OBJECTIVE

Motivated student with a strong foundation in programming, algorithms, and software design, along with a growing focus on artificial intelligence and machine learning. Seeking a developer position to apply technical knowledge in real-world projects and contribute to building scalable, efficient, and intelligent applications.

EDUCATION

Bachelor of Engineering in ECE
The National Institute of Engineering
Mysore   *2022–26*

Senior Secondary
Class XII   (2022)

Secondary
Class X   (2020)

Certificates

- C++ Data Structures and Algorithms
- AI for Everyone
- AWS Academy ML Foundations
- Fundamentals of Machine Learning and AI
- CS50x by Harvard (edX)
- Write Smarter with Overleaf

SKILLS

Languages	C, C++, Python	**Soft Skills**	
Web Development	HTML, CSS, React.js, Node.js	Communication	
Databases	MySQL, MongoDB	Teamwork	
Core Subjects	OOPS, DSA, OS, CN, DBMS	Problem Solving	
ML / AI	YOLOv5, CNN, RNN, Gen AI	Adaptability	
DevOps Tools	Docker, Jenkins, Git, GitHub, AWS	Time Management	

Projects

Ambulance Detection System for Smart Traffic Signals   *Python, YOLOv5, OpenCV, PyTorch*

Developed a computer vision system to detect ambulances in real time using YOLOv5 and automate traffic signal control to prioritize emergency vehicles.

- Trained YOLOv5 model to accurately identify ambulances from live CCTV/video feeds.
- Integrated OpenCV for real-time video processing and object tracking.
- Simulated traffic signal logic to dynamically change lights upon ambulance detection.
- Reduced average wait time at intersections in simulation.

Multimodal RAG Application   *LangChain, Python, Chroma DB, OpenAI, Streamlit*

Implemented a Retrieval-Augmented Generation pipeline to query PDFs containing text, images, and tables, enhancing retrieval and response quality.

- Built a complete processing pipeline for user queries across multimodal PDF content.
- Extracted and indexed text, images, and tables using LangChain and Chroma DB for efficient retrieval.
- Applied summarization techniques to generate concise, structured answers.
- Developed a Streamlit interface for interactive querying and result visualization.