Sathvik Manthri

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Skills & Interests

Programming skills: C, C++(basic), Python, Java(basic), SQL, HTML, Latex ; Scikit-learn, Scipy, Numpy, Pandas, Matplotlib, OpenCV, Seaborn, Gradio, FastAPI ; Pytorch, Tensorflow, Langchain, LangGraph ; Docker, Fusion 360

Areas of Interest: Computer Vision, Deep Learning, NLP, Data Science, Generative AI, LLMs, Robotics

Industry Experience

⇒ **ThoughtSpot, Bengaluru** *May 2025 - July 2025*
Engineering Intern Certificate

- Developed AI-Driven **Liveboard Agent** using **LangGraph** to automate visualization grouping and layout based on narrative context (Who, Why, What). Also implemented **Dynamic Tab Handling** enabling selective beautification and auto-generation of tabs, improving dashboard usability and interpretability.
- Built **Screenshot-Based Regression Pipeline** that used pixel-level comparison to catch UI regressions, successfully identifying issues in background rendering.
- Added feature-rich Liveboards(dashboards) to the metadata, eliminating the need for manual setup during E2E testing and accelerating test case creation.

⇒ **Coboticca Automation Pvt. Ltd, Mumbai** *May 2024 - June 2024*
Design Intern Certificate

- Designed a mobile robot using Fusion 360 to assist elderly users by delivering a cup of water on demand through a custom-built automatic cup-dispensing mechanism, eliminating the need to lift heavy water containers and also integrated a medication storage system that reminds users to take their medication on time, automatically dispensing water with the medicine for added convenience.

Research Experience

⇒ **IISc Bengaluru, Learning & Extraction of Acoustic Patterns Lab** *December 2025 - Present*
Research Intern under *Prof. Sriram Ganapathy*

- Working on Auditory Attention Decoding and Target Speech Extraction

⇒ **IIT Indore, AI Lab** *June 2024 - December 2025*
Research Intern under *Prof. Chandresh Kumar Maurya*

- Explored hierarchical multi-task learning frameworks for audio classification and co-authored a dataset paper on gun-sound classification for gun-type and broad direction prediction, currently under review at *Springer Multimedia Tools and Applications*.

⇒ **IIT Indore, Mathematics of Data Science and Simulation Lab** *May 2024 - July 2024*
Research Intern under *Prof. Kapil Ahuja* Certificate

- Contributed to the **Deep Learning for Genetic Studies** project, focusing on developing deep learning models and attention mechanisms for predicting gaps in genome sequences, achieving 0.86 training accuracy and 0.71 validation accuracy.

Projects

⇒ **Krishi Mitra** *October 2025 - November 2025*
Course: Generative & Agentic AI in Practice GitHub link

- Built a multilingual, AI-powered conversational agent that bridges information gaps for Indian farmers.
- It delivers real-time crop prices, aggregated government scheme guidance, localized weather insights, and image-based crop disease diagnostics through a single web chat interface.

⇒ **TachyView** *October 2025 - November 2025*
Course: Graphics & Visualization GitHub link

- It is a web-based visualization tool that combines topological spines, and volume rendering to enable intuitive, interactive exploration of scalar fields directly in a browser.

⇒ **Bird_Scouts** *October 2024 - November 2024*
Course: Applied Data Science and AI GitHub link

• Built a Streamlit web app that classifies over 50 bird species through separate image (including feathers) and audio pipelines, leveraging **EfficientNetV2-S** and **YOLO** for feature extraction & object detection. Trained using **Hierarchical Multitask Learning** and **FAMO optimization** achieving a ROC_AUC score of 0.996.

• Implemented a user login system along with a collaborative community map for bird sightings, encouraging greater participation in biodiversity monitoring and fostering user engagement.

• Integrated an **RAG-powered AI chatbot** within the web app using **ChromaDB** and **LangChain**, providing users with an interactive, AI-driven experience to answer bird-related queries.

⇒ **Community Detection in Financial Networks** *November 2024*
Course: Data Analytics GitHub link

• Implemented a **Stochastic Block Model** framework to analyze community structures within global trade networks (spanning 200+ countries) and the correlations in the Indian equity market.

⇒ **Term paper report on the topic State Space Models and HiPPO framework** *May 2024*
Course: AI & ML Report, Code and Presentation link

⇒ **Presentation on Undecidability of Validity of First Order Logic** *March 2024*
Course: Automata and Computability Presentation link

Education

• **Indian Institute of Science, Bengaluru** *2022-2026*
B.Tech + M.Tech (Dual Degree) in Mathematics and Computing CGPA: 7.7 ; TGPA: 8.2

• **Alphores Junior College, Karimnagar, Telangana** *2020-2022*
Telangana State Board of Intermediate Education Percentage: 98.9%

• **Alphores e-techno school, Karimnagar, Telangana** *2015-2020*
The Board of Secondary Education, Telangana GPA: 10

Positions of Responsibility

• **Initial member in the Founding panel , Mechanical Team lead , Software team member** *August 2023 - May 2024*
⇒ Team Vicharaka @ IISc UG Robotics Club

–Led the Mechanical sub-team in designing a rover by analyzing existing models and research papers on stability and wheel design, culminating in the creation of two prototypes built from scratch in our workplace.

–Organized and showcased the rover at IISc's Open Day 2024, receiving public and institutional acclaim - Vicharaka @ OpenDay2024

–The official magazine of IISc published an artical on the success of our club - Red Rover

–Designed a rover with a 100kg payload, featuring autonomous navigation and a robotic arm for soil sample collection.

–Developed a complete CAD model of the rover in Fusion-360 and performed stress analysis and simulations in Gazebo. (3D model - Rover)

• **Co-lead of Design Team** *May 2023 - February 2024*
⇒ Databased @ IISc UG CS club

–Displayed interactive and fun projects on Open Day 2024 @ IISc - Databased @ OpenDay2024

Achievements

• **JEE Advanced** All India Rank 4044

• **JEE Main** All India Rank 3337

• **TS EAMCET** State Rank 409