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, LLM's, 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 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

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

• Currently developing **Hierarchical Multitask learning** models for audio classification tasks.

⇒ **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

⇒ **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

⇒ **Course project 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 in Mathematics and Computing CGPA: 7.7 ; TGPA: 8.4
  - *Current Coursework:*
    → *Generative & Agentic AI in Practice: LLM(architecture, fine-tuning, LLMOps), RAG, MCP, Multimodal AI systems, Federated & Distributed AI, Responsible AI(Guardrails),*
    → *Graphics & Visualization: OpenGL*
- **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