Somanatha Basavanuty

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Education

RNS INSTITUTE OF TECHNOLOGY
Computer Science Engineering – CGPA: 8.7
Duration: 2023 – 2027

Skills-Summary

- Languages: Python, SQL, C, C++, JavaScript.
- Frontend Technologies: HTML5, CSS3, SCSS.
- Frameworks: Tailwind CSS, Bootstrap CSS.
- Backend & Databases: Node.js (Basics), REST Api, Express.js (Learning), MongoDB, MySQL.
- Tools: Git, GitHub, GitHub API, VS Code, Excel, Spreadsheet, PowerPoint.
- Skills: Data Science, Data Visualization, Machine Learning (basics).
- Platforms: Jupiter Notebook, Google Colab, Spyder, PyCharm.

Work-Experience

INTERN – SPACECRAFT DATA ANALYST | ISRO (MCF)   *(JULY 2025 – AUGUST 2025)*

- Applied **Linear Regression** and **PCA** on a **large-scale spacecraft telemetry dataset (~60 million records, 18 features)** to predict key telemetry parameters and analyse inter-feature relationships.
- Built a robust data preprocessing pipeline involving duplicate removal, missing value handling, datatype conversion, and **1-minute interval resampling** for uniform time-series data.
- Performed detailed **Exploratory Data Analysis (EDA)** using **Matplotlib** and **Seaborn** to identify trends, outliers, and correlations in spacecraft telemetry.
- Trained and validated the Linear Regression model using Scikit-learn, **evaluating performance with R^2 score, MSE, residual plots, and 3D regression visualizations** for accuracy assessment.

Projects

Gemini AI Chatbot with Hybrid Memory (Pinecone + MongoDB) | (MERN Stack)

- Developed an AI chatbot using the **Gemini model** for intelligent, **context-aware conversations**.
- Built a **hybrid memory system** using **Pinecone (vector DB) for long-term recall** and **MongoDB** for **short-term context** and **authentication**.
- Implemented **Retrieval-Augmented Generation (RAG)** using **Pinecone** for **context-based information retrieval** and **improved response accuracy**.
- Built **RESTful APIs** in **Node.js** and integrated them with a **React** frontend using **Socket.io** for **real-time communication**.
- Designed a **dark-themed, responsive UI** with **timestamped messages** and smooth **real-time interaction**.
- Deployed on **Render**, showcasing end-to-end expertise in **AI integration, database design, and full-stack deployment**.
- Currently exploring **LangChain** and implementing it in the **next version** to enhance memory handling.

Music player with Mood based Songs Recommendation system | (MERN Stack)

- Full-stack music web app which contains **two** functionalities. One is the **normal music player** and it fetches the songs form the **Spotify API**. The other functionality is **mood-based music player** where the **Face-Api.js** is used to detect the user's **face expression** and **predict the mood**. The song's **URL** are stored in the **MongoDB** with the **specific mood**. The intended song is then fetched from the database dynamically into the frontend and the user could then control and play the song. This tech stack includes **MongoDB**, **Express.js**, **React.js**, **REST Api**, **Node.js**.
- Used **imagekit's** Integrated **cloud Storage** for storing all the songs and The **URL** generated is stored in MongoDB.
- Built responsive **Tailwind CSS UI** for Music player and moody player interface.

Advanced Music Player |

- Developed a **JavaScript-based music player** that plays pre-linked songs with **play, pause, next, previous, repeat, and shuffle** functionalities.
- Implemented a **volume controller and playback progress bar** for better user interaction.

Face & Voice AI Chatbot |

- Built an **AI-powered chatbot** with **real-time facial expressions** and **voice responses**.
- Integrated **text-to-speech (TTS)**, **facial animation (OpenCV)**, and **LLM-based natural replies**.
- Created a lifelike **interactive avatar** that reacts visually and audibly to user queries.

AI Stock Market Predictor Chatbot |

- Built an **AI-powered Telegram chatbot** predicting **stock market trends** using **Python, scikit-learn, Pandas, NumPy**, and **live market APIs**.
- Deployed on **Google Cloud** with **Docker containers** for scalability and continuous uptime.
- Implemented **time-series forecasting**, **regression models**.
- Delivered **real-time market insights** and automated prediction reports directly within Telegram.

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Certifications

IBM AI Enterprise Workflow Specialization
- Verified skills applying different analytical techniques by analysing real-world datasets, creating visualizations & interactive dashboards, and presenting reports to share findings of data analysis, and is now equipped with skills for an entry-level role in data analytics.

CSS (Basic) Certification – HackerRank   *(Mar 2025)*
- Verified skills in styling and layout techniques for web development.

Python Essentials 1 – Cisco Networking Academy & OpenEDG Python Institute *(Dec 2023)*
- Gained proficiency in Python programming, debugging, and problem-solving.

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