Akhil Gattu

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Academic Details

Year	Degree	Institute	CGPA/Marks(%)
2024	B.Tech in Biomedical Engineering	IIT Hyderabad	8.72
2024	B.Tech Mathematics and Computing (Minor)	IIT Hyderabad	6
2020	XII (TSBIE)	FIITJEE junior college	94.2%
2018	X (CBSE)	Silver Oaks School	94%

Positions of Responsibility

- Lambda (Software Development club of IIT-H) core for the year 2021-22.

Skills

- **Programming Languages:** C/C++, Python, SQL
- **Cloud technologies:** Amazon Web Services (AWS), Snowflake (Data warehousing)
- **Tools:** Git, Jupyter notebook, VS Code, ETL (Extract, transform and load tools)
- **Libraries:** Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn, Tensorflow, PyTorch, SciPy, OpenCV
- **Miscellaneous:** Software Engineering, Machine Learning Engineering, Object Oriented Programming, Relational Database Management System (RDBMS), Deep Learning, Command-line interface (CLI)
- **Operating system:** Linux, Windows

Relevant Courses

Computer Science and AI courses:
- Foundations of Machine Learning
- Introduction to Programming
- Data Structures & Algorithms

Mathematics courses:
- Linear algebra
- Probability
- Statistics

Core courses:
- Probability and Random Processes
- Algorithms and Data Structure Lab
- Foundation of Natural Intelligence

Experience

Data engineering semester internship at Thomson Reuters (Jan 2023 - Jun 2023) - Data and analytics team:
- The internship focused on enhancing customer service by leveraging text analytics of sentiments and large language models (LLMs). This involved deploying an end-to-end machine learning pipeline on AWS cloud, utilizing Snowflake data warehouse and ETL for data management, and using Power BI for data visualization.
- Business problems were addressed by applying concepts like linear programming to optimize company resources, ensuring maximum value delivery to customers.

Projects

Human perception analysis:
- Co-developed and deployed a web application using the Flask framework (to understand human perception of image aesthetics) that enables users to participate in session-based image pair surveys. The recorded image preferences were systematically stored in a SQL database.
- Conducted in-depth statistical analysis, by employing techniques such as pairwise comparison analysis with heat-map matrices to facilitate the identification of the most favoured images by combining data and insights from across all the survey sessions.
- Integrated Convolutional Neural Network (CNN) layers into the architecture for multi-label classification. The approach enabled the detection of aesthetic features within images and establish correlations with users' image preferences.
- Link of website: https://aestheticheritage.pythonanywhere.com/

Yoga day analytics:
- Participated in the 2022 tech event organised by the Biomedical Engineering department. An endpoint was implemented to receive data from multiple sensors over WiFi and store it in a remote PostgreSQL database.
- Live graphs using Matplotlib were used to visualise the sensor data, and ongoing work includes analysing the data to uncover insights and patterns.

GitHub link for all the projects: https://github.com/akhilgattu02