Sharanya Manohar

manoharsharanya@gmail.com | 3129006719 | Chicago, IL
Website | Github | LinkedIn

EDUCATION

Master of Science in Computer Science, University of Illinois at Chicago, *Chicago, IL* , Cumulative GPA: 3.6/4.0 **August 2021 – May 2023**
Relevant Coursework: Data science, Machine Learning, Database systems, Statistical NLP, Advanced Data Mining and Text mining, Information Retrieval, Big Data visualization and Visual Analytics, Computer Algorithms

Bachelor of Engineering in Electronics and Communications, Visvesvaraya Technological University, *Karnataka, India* **August 2015 - June 2019**

EXPERIENCE

Data Scientist, Caterpillar Inc, *Peoria, IL* **September 2024 - Present**

- Designed and maintained **Power BI** dashboards for the Integrated Components and Solutions Division, improving supplier performance tracking and component reliability while implementing Row-Level Security (RLS) for controlled data access.
- Developed predictive **Machine Learning models** in **Python** to forecast component failure rates and maintenance needs, enhancing proactive maintenance strategies and reducing unplanned downtime across fleet operations by 25%.
- Optimized **Snowflake** database performance and cost efficiency, improving query speeds by 50% and lowering storage costs by 20%.
- Automated real-time reporting on component lifecycle costs and failure rates using **Power Automate** and **PowerApps**, streamlining warranty claims analysis and cutting manual processing time by half
- Managed project planning and tracking in **Azure DevOps**, ensuring on-time delivery of key analytics initiatives.

Data Science and Analysis Specialist, UIC, *Chicago, IL* **August 2023 – June 2024**

- Applied **time series analysis** to visualize large spatiotemporal datasets, identifying 50 key patterns from both structured and unstructured data.
- Created **GenAI** solutions including **LLM** and **GPT**-4 vision models hosted on **Azure Cloud,** enabling dynamic interpretation of spatial and temporal patterns improving response accuracy by 30%.
- Employed **SQL** and Jupyter for data mining and visualization geographic and commuting data achieving a $200,000 increase in research funding.

Data Scientist - GH worker**,** Discovery Partners Institute - UIC, *Chicago, IL* **May 2022 - August 2022**

- Developed a predictive algorithm to optimize EV charger placement in urban areas, estimating the long-term impact of placement strategies and predicting a 20% increase in the adoption rate of electric vehicles over four years.
- Leveraged unsupervised **ML techniques** and time series analysis on unstructured data, identifying 30 key usage patterns
- Improved charger placement prediction efficiency using **statistical analysis** and **data mining** on traffic patterns, increasing the number of efficiently placed chargers by 50 units.

Data Science Research Associate, Center for Research in Space Science and Technology, *Bengaluru, India* **August 2019 – July 2021**

- Created an interactive dashboards using **PowerBI** and **ETL** pipeline for satellite telemetry data analysis using **Python**, which supported mission control and business operations by reducing data retrieval times from 30 minutes to 5 minutes.
- **Cleaned, analyzed, and preprocessed** 5TB of structured telemetry data, integrating **Bayesian methods for anomaly detection** and **A/B testing**, leading to a 20% reduction in false alarms..
- Employed **Python** to manage and analyze large volumes of telemetry data, using **multivariate statistical analysis** techniques to identify patterns and predict satellite component failures, decreasing unexpected failures by 15 incidents per year.
- Implemented **NLP** techniques like **BERT transformer models** for text classification and extraction of high-end research papers on satellite telemetry to derive meaningful insights for improving satellite communication protocols and reducing data transmission errors by 25%.

SKILLS

- **Certification:** Microsoft Certified: Azure Data Scientist Associate (present)
- **Programming Languages & Frameworks:** Python, R, SQL, JavaScript, HTML, ReactJS, REST API, Django, CI/CD pipelines, Azure DevOps
- **Data Science and Machine Learning:** Tableau, PowerBI, Python (scikit-learn, numpy, pandas, matplotlib), A/B testing, ETL, Causal analysis, Statistics, Time series, Bayesian, Experimental design, Hypothesis testing, TensorFlow, PyTorch, WordNet, NLTK, OpenCV

LEADERSHIP, PROJECTS & RESEARCH

Graduate Teaching Assistant, Business and its External Environment (University of Illinois at Chicago) **August 2022 – May 2023**

- Supported faculty in teaching a class of over 250 students by developing performance monitoring plans, suggesting enhancements, implementing evaluation strategies, and creating detailed documentation to continuously improve the learning experience.

Operations & Project Manager, **Illinois Ventures**, Chicago, IL **May 2022 – May 2023**

- Integrated and visualized **financial data** from multiple sources using **Tableau**, creating dashboards to track key performance indicators and investment metrics, and streamlined **financial reporting** including **credit risk management and compliance**, reducing due diligence time by 20 hours per project.

Projects:

- **Language Translation Multilingual Support**: Deployed a translation service leveraging NLP, using Transformer models through HuggingFace, bolstering multilingual capabilities, ensuring seamless translations across major European languages.
- **Ecommerce Revenue Prediction**: Employed Scala, PostgreSQL in **DataBricks** to craft a system that analyzes customer behaviors, predicting and optimizing e-commerce revenue streams.
- **Tackling Food Wastage with Technology**: Developed a Django-backed platform, storing data in MySQL, connecting food donors and beneficiaries using a REST API, effectively reducing food wastage and nurturing community relationships
- **Mining Sequential Patterns in frequent item sets** - Based on MS-Generalized Sequential Patterns and Apriori algorithm
- **Capital BikeShare Analysis and Visualization** – City of Washington D.C

Paper critique & presentation – "HiTailor: Interactive Transformation and Visualization for Hierarchical Tabular Data"; "Infusing Finetuning with Semantic Dependencies"; "Detecting Arbitrary Order Beneficial Feature Interactions for Recommender Systems"