Kukutapu Nithish Kumar

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Summary

Data Scientist with 3.5 years of experience designing and deploying data-driven solutions across healthcare, manufacturing, and supply chain domains. Skilled in applying machine learning and generative AI to solve complex business problems, improve forecasting accuracy, and automate decision-making. Strong hands-on expertise with Python, SQL, and cloud platforms (AWS, GCP, Databricks). Passionate about bridging analytics with real-world business value through scalable, production-ready solutions.

Experience

Software Engineer - Data Scientist July 2022 – Present

Innova Solutions *Hyderabad, Telangana*

- Developed an AI-powered healthcare chatbot using **Dialogflow** and **Python**, enabling patients to interact through both text and voice. Integrated NLP models to interpret medical terminology and deployed the solution on **Google Cloud** with HIPAA-compliant data handling.
- Implemented a **regression model** to predict future rolling schedules in the steel manufacturing process, optimizing production planning and reducing schedule deviations by 15%. Automated model retraining pipelines using **Databricks** and **SQL**.
- Designed and deployed predictive models for **stock-out forecasting**, combining regression and classification approaches to estimate depletion rates and stock-out probabilities. Delivered insights that reduced unexpected stock-outs by 20%.
- Built and maintained **data pipelines** integrating data from Postgres and SAP HANA, and developed dashboards for business teams to monitor inventory and production trends.
- Applied **Linear Programming** techniques to solve a 3D bin packing problem, optimizing how items fit within a container to maximize space utilization. Developed a Python-based optimization model that improved packing efficiency and reduced transportation costs.
- Collaborated with cross-functional teams including manufacturing engineers, data engineers, and product managers to align predictive insights with operational goals.

Software Intern Mar 2022 – May 2022

Innova Solutions *Hyderabad, Telangana*

- Assisted in building ML prototypes using **Python** and **Scikit-learn** for time series forecasting and classification.
- Performed exploratory data analysis (EDA) and feature engineering to improve model accuracy and robustness.
- Gained hands-on experience with **AWS**, **Docker**, and **Jenkins** for deploying machine learning models and automating pipelines.

Education

Sreenidhi Institute of science and technology Hyderabad, Telangana

Bachelor of Technology, CGPA: 8.0 *Aug 2018 – Jul 2022*

Projects

Stock-Out Prediction and Inventory Optimization |

Predictive Modeling, PostgreSQL & SAP HANA, Machine Learning Nov 2023 – Present

- Developed predictive models to identify potential stock-out events and optimize safety stock levels.
- Implemented both regression (for depletion rate & stock-out date prediction) and classification models (to determine likelihood of stock-out events).
- Delivered dashboards highlighting high-risk SKUs and future depletion trends, reducing unexpected stock-outs by over 20%.
- Built and maintained ETL pipelines integrating data from Postgres and SAP HANA.

Rolling Schedule Forecasting (Steel Manufacturing) |

Databricks, Python, Machine Learning Mar 2023 – Oct 2023

- Built and deployed a regression-based forecasting model to predict rolling schedules for each production block in the steel manufacturing process.
- Automated data pipelines in Databricks for data cleaning, feature engineering, and retraining workflows.
- Reduced schedule deviation by 15% and improved overall line efficiency by optimizing rolling order predictions.
- Collaborated with process engineers to interpret model insights and translate them into actionable production adjustments.

AI-Powered Healthcare Chatbot with Voice Integration |
Python, Dialogflow, Google Cloud Jan 2023 – Mar 2023

- Designed and developed a conversational AI chatbot using Dialogflow and Python, enabling patients to interact with healthcare systems through voice and text-based interfaces.
- Integrated NLP models to understand medical terminology and provide context-aware responses.
- Improved user response accuracy by 25% through iterative fine-tuning and feedback analysis.
- Deployed solution on Google Cloud with secure data handling following HIPAA compliance.

3D Bin Packing Optimization using Linear Programming |
Python, Linear Programming, Optimization July 2022 – Dec 2022

- Formulated and implemented a **linear programming model** to optimize 3D bin packing, determining the most efficient arrangement of items within a container.
- Utilized Python's **PuLP** and **NumPy** libraries to design and solve the optimization problem.
- Improved packing efficiency and reduced unused space by up to 18%, lowering transportation and storage costs.
- Validated the optimization results using simulation-based testing to ensure feasible and scalable solutions.

Technical Skills

Languages: **Python**, SQL, HTML/CSS
Machine Learning: Regression, Classification, Time Series Forecasting, NLP, Generative AI
Tools & Platforms:Databricks, Postgres, SAP HANA, Docker, Jenkins, Git
Cloud:AWS (S3, EC2, Lambda), Google Cloud Platform (BigQuery, Vertex AI)
Libraries:Scikit-learn, Pandas, NumPy, TensorFlow, PyTorch, Matplotlib, Seaborn
Other: REST APIs, Voice AI, CI/CD, MLOps, Excel, PPT

Certificates and Achievements

- Coursera: Machine Learning by Andrew Ng / Generative AI Specialization
- Red Hat OpenShift Administration I: Managing Containers and Kubernetes (DO180)