Mahesh Alapati

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SUMMARY

- 8+ years of experience in software development with a focus on using advanced analytics to understand complex datasets and make informed decisions.
- 5+ years of expertise in Data Analytics and Business Intelligence, involving Machine Learning, MLOps, model training, and deploying models. Skilled in working with large datasets, both structured and unstructured, using SQL for data mining, acquisition, validation, and predictive modeling.Proficient in creating visualizations with tools like Python, PowerBI, and Tableau.
- Knowledgeable in various statistical modeling and machine learning techniques, such as K-Nearest Neighbors, Naive Bayes, Regression models(linear and logistics), Decision Trees, Time Series Analysis, Random Forest, XGBoost, and more. Also familiar with SQL for data manipulation and analysis.
- Performed data mining, data collection, data cleaning, developing models, validation, visualization, and performed Gap analysis. Data Manipulation and Aggregation from different
- Proficient in statistical techniques such as hypothesis testing, A/B testing, and ANOVA. Skilled in dimensionality reduction and feature extraction using PCA Principal Component Analysis, Experienced ARIMA Forecasting in time series analysis and forecasting using ARIMA models.
- Demonstrated success in creating custom solutions for business challenges using statistical machine learning and data mining techniques. Experienced in presenting insights through clear and intuitive data visualizations, including dashboards.
- Proven ability to detect anomalies in time series data using SQL queries, helping to identify unusual patterns and outliers for better decision-making.
- Developed cutting-edge approaches by combining leading heuristics with optimization techniques to translate real-world challenges into mathematical models and lead their design, implementation using commercial solvers - Gurobi, CPLEX and collaboration with agile team members and stakeholders.

TECHNICAL SKILLS

- **Programming Languages**: SAS, R, MATLAB, Python (NumPy, Pandas, Matplotlib, SciPy, seaborn);
- **Database systems**: MySQL, db2 ;
- **Statistical Modeling**: Exploratory Data Analysis, Time Series Analysis, ANOVA, Hypothesis Testing(A/B), Predictive Modeling,Cross Validation, Model Fitting, Discrete Event Simulation, Linear Programming, ETL, Data Transformation, Data Mapping, Data Modeling, Data Mining,Data Warehousing, Business Intelligence, Predictive Modeling, Data Presentation, Reporting, Data Visualization, Agile Project Management
- **Analytical Tools:** Tableau, Gurobi, GitHub, Power BI, Excel, Alteryx;

EDUCATION

University of North Carolina, Charlotte North Carolina, USA
Master's in Engineering Management in System & Analytics - *GPA- 3.63/4.00*
2016-2018

EXPERIENCE

Developer, Data Analytics - Supply Chain Feb 2019– Present
Compass Health Brands- Cleveland
Reporting to the Director of Supply Chain to drive the enhancement of supply chain operations through data-driven insights and strategic decision-making. Responsible for $20M+ in sales and $10M+ in raw material for a $250M medical device manufacturing company.

- Alteryx is utilized to create and execute Extract, Transform, Load (ETL) workflows.This involves writing SQL queries with multiple joins to automate/manipulate data from diverse sources such as databases like DB2, Smoothie, and others used by the company.
- Tableau is leveraged to build dynamic visualizations that monitor Key Performance Indicators (KPIs) related to Supply Chain and operations.
- Led the creation and execution of data-focused strategies, leading to a 20% rise in customer engagement and a 15% boost in operational efficiency through monitoring calls volume metric.
- Headed the COVID-19 analytics team with leading efforts for delivering optimized supply & inventory reduction through container optimization. Achieved a $5M reduction in working capital as a result of these efforts.

- Implemented optimization models utilizing ABC XYZ analysis, resulting in a cost savings of $2.4 million by ensuring optimal inventory levels.
- Developed a recommendation model with $2M sales wins in 2022 and 2023 by using historical sales transaction data for the manufactured SKU's by stocking SKU's instead of make to order model.
- Executed a cross-docking system with an annual freight savings of $200K by reducing transfer between warehouse locations.
- In terms of dashboarding, Tableau Dashboards are populated from Alteryx and Tableau using a scheduler with a refresh cycle of 30 minutes. These dashboards display metrics for the last business day, month-to-date, and the previous month.
    a. To visualize how customer service representatives effectively respond to service, product cases within 24 hours of case creation from customer complaints.
    b. To visualize how customer service representatives call trends during ON/OFF hours, which shows hourly and daily trends to track the volume of customer calls.
    c. To visualize customer service representatives order entry errors like wrong product IDs, quantity, shipping address etc.

Tata Consultancy Services Ltd, INDIA Dec 2013- June 2016
Systems Engineer-India

- Extraction of data from large external data sources such as relational databases SQL Server and MySQL to analyze and implement projects for predictive maintenance of the automotive fleet for UK clients.
- Drove strategies to establish business goals in adherence to client requirements, collecting and compiling extensive amounts of data, either streamed, on-board data or historic and aggregated data from off-board databases.
- Worked in the Research and Development team, focussing on the design and development of medical devices, prototype building of Proof of Concepts: developed total costs, timeline, skills and potential resource requirements.

PUBLICATIONS

Drone Routing for Damage Assessment on Power Distribution Systems under HILF Events: Sep 20, 2018 Dissertations & Theses @ University of North Carolina Charlotte ProQuest Dissertations & Theses Global

PROJECTS

Optimization(Skills**: Python, mathematical programming, Gurobi, Mathematics, Problem Solving, Design Pattern**)

- Developed a drone routing algorithm that cut inspection time by 20% and extended coverage by 12%, leading to a significant increase in damage detection efficacy. Engineered an electricity routing model to enhance efficiency by 6%, minimize energy loss by 8%.
- Implemented intelligent scheduling methods, reducing maintenance downtime by 7% and optimizing resource utilization by 15%, resulting in a 12% reduction in project completion time. Developed a user-friendly interface using MATLAB and gurobipy, promoting transparency and collaboration.

Machine Learning(Skills**: Python, EDA, Problem Solving**)

- Developed predictive models using various techniques such as regression, classification, clustering, and artificial neural networks. Achieved an average accuracy rate of 88% across all models, with a 6% reduction in prediction errors compared to baseline models.
- Conducted rigorous testing, including stationary, non-stationary, and hypothesis tests, to ensure model accuracy and reliability. Validated model performance through cross-validation techniques, achieving an average validation score of 92%.
- Utilized Forecast Error Analysis metrics Absolute Error, MAD(Mean Absolute Deviations), MAPE(Mean Absolute Percentage Error) to assess model performance and reduced forecasting errors by 6% through continuous refinement. Consistently monitored and addressed forecast errors to ensure model reliability and robustness.

CERTIFICATIONS

- Base Programmer for SAS 9 certification,
- Alteryx Foundational Micro-Credential,
- Intermediate for Python to Data Science,
- Tableau for Beginners,
- Intro to SQL for Data Science

WEBSITES

- **Tableau:** https://public.tableau.com/app/profile/mahesha.alapati/vizzes
- **Github:** https://github.com/maheshalalapati2