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Experienced Data Scientist

Seasoned Data Scientist with over 5 years' experience solving problems such as transportation, supply chain, and finance. Excellent at engaging in business discussion, collaborate with different teams, and always eager to learn. Hands on experience with a wide range of machine learning knowledge, including NLP and computer vision

Technical Skills

Data Science	Random Forest, Gradient Boosting, Support Vector Machines, k-NN, K-Means, Sentiment Analysis
Statistics	Linear Regression, Logistic Regression, ARIMA, ARIMAX, SARIMA, SARIMAX, Hypothesis Testing, ANOVA, Testing Model Assumptions, Descriptive Statistics
Deep Learning	Backward Propagated Neural Networks, Convolutional Neural Networks, Image Classification, Object Detection (YOLO), Computer Vision, NLP
Databases/Systems	DB2, SQL Server
Programming	Python, R, SQL, PySpark

Professional Experience

Sam's Club Tech Dallas, TX   Apr 2020 – Current
Sr. Data Scientist
- Lead Data Scientist working on various transportation problems such as forecasting the number of trailers, estimating when trailers will finish loading, and extracting information from shipment items using OCR tools
- Leading a team of three machine learning juniors and supporting them with code reviews, machine learning guidance, and presentations
- Engage with business partners on a regular basis to update them on progress, metrics, and timelines
- Mentored 2 interns (Summer 2020, Summer 2021)

J.B. Hunt Transport, Lowell AR   Jun 2017 – Apr 2020
Data Scientist II
- Led the pricing and negotiation models that were used for the Marketplace 360 application, used by carriers, brokers, and business analyst.
- Mentored two interns (Summer 2018, Summer 2019), one of which came in as a full time Data Scientist
- Engaged with business partners on a regular basis to update them on progress, metrics, and timelines

Education

Tarleton State University

M.S. Mathematics | Theoretical Machine Learning Concepts

B.S. Mathematics | Applied/theoretical Mathematics

AI/ML Experience

Daily Trailer Forecast – Sam's Club

Scope: Forecast the number of trailers required from carriers at the DC level out 7 days
Approach: Built an ARIMA model to forecast capacity out 7 days. The results were consumed by an application called Vision and were accessed by both internal and external parties. This was done both at the FC and DC levels. These models were deployed on Databricks and running daily
Outcome: The values are being consumed by Vision and used by carriers for better planning. With these predictions, carriers now know the number of trucks required for the next 7 days.

Predict Trailer Closure – Sam's Club

Scope: Predict the time it takes for a trailer to close once the loading process begins
Approach: Trained a Random Forest Regressor to predict the amount of time (in hours) it would take for a trailer to close. The main features here were weight, volume, pallet count, labor, total trailers, and timestamps. The model had an excellent accuracy of 90% for FCs and only 85% for DCs. The models were deployed on Databricks and running on batch every 30 minutes
Outcome: The values are being consumed by Vision and used by carriers as well. Given a list of trailers, carriers now have visibility on the time trailers will be ready to ship out. These models are relatively new, but the idea is that we reduce delivery time.

PTI GTIN Extraction – Sam's Club Tech

Scope: Extract GTIN label information (serial numbers) from shipments that do not contain barcodes and then extract the batch id, harvest date, and farm id
Approach: Created an Azure OCR resource that integrated with Azure Blob Storage. Using handheld devices, images would be sent to Blob which would trigger the Azure OCR model to run, extract the GTIN serial numbers, and store them in a database. Once stored, the serial numbers could be easily converted to batch id, harvest date, and farm id. This was primarily done for the Strawberry goods.
Outcome: We were able to track the harvest date, weed out produce with expired dated, and deliver fresher product

Shipment Pricing (Brokerage) – J.B. Hunt Transport

Scope: Predict the expected shipment price of transporting goods
Approach: Trained a Random Forest model on broker data using features such as weight, volume, distance, market indicators, and timestamps. The model had an accuracy of 90% and was deployed as a webservice using a Linux system.
Outcome: The company's business unit saw an increase in revenue of 5%. On top of a revenue increase, brokers now had quicker and efficient bids, especially inexperienced ones

Automated Price Negotiation – J.B. Hunt Transport

Scope: With a shortage of brokers, train a model to autonomously bid with carriers for the Marketplace 360 application.
Approach: Built a Logistic Regression model to automatically accept or reject carrier offers coming in through our Marketplace 360 application. Features include Expected Shipment Price (Above), Offer Number, Expiration Hours, and 2 Week Lane Average. Since the data was imbalanced, used F1 score to validate the performance and was deployed as a webservice.
Outcome: Rather than accepting/rejecting offers one at a time (human labor), the system was now doing the same tasks autonomously and efficiently.

Revenue Forecast – J.B. Hunt Transport

Scope: Forecast revenue out 3 months for the finance department
Approach: Trained an ARIMAX model to forecast our revenue our to 3 months. Used MAPE to assess the performance. This model was developed and deployed on Databricks, running once a week to refresh the values. This was a timeseries model which used consumer price index as the exogenous feature.
Outcome: The consumer was the Director of Finance, who used the predictions to make business decisions.