Retail Sales Forecasting using XGBoost, SARIMA, and LSTM (Retail)

Status: Completed

Tools & Technologies: Pandas, XGBoost, SARIMA, LSTM, MLflow, Streamlit, GitHub Actions

Models & Methods: XGBoost Regressor, SARIMA (Seasonal ARIMA), LSTM (TensorFlow)

Outcome / Impact: MAPE of ~12%, highly scalable solution for retail sales insights

GitHub Repo: https://github.com/coolhead/sales-forecasting

Car Damage Detection using YOLOv8 (Automotive / Insurance)

Status: Completed

Tools & Technologies: YOLOv8, Ultralytics, Roboflow, AWS S3, SageMaker, GitHub Actions

Models & Methods: YOLOv8 object detection model

Outcome / Impact: Deployed real-time endpoint for damage detection in car images

GitHub Repo: https://github.com/coolhead/car-damage-mlops-pipeline

Bike Sharing Demand Prediction (Transport / Smart Mobility)

Status: Completed

Tools & Technologies: Linear Regression, Seaborn, Sklearn, Statsmodels, Matplotlib

Models & Methods: OLS Regression, Feature Selection using VIF

Outcome / Impact: Adjusted R = 0.83, useful for predicting peak hour bike demand

GitHub Repo: https://github.com/coolhead/Predict-Bike-Sharing

Melanoma Cancer Detection using CNN (Healthcare)

Status: Completed

Tools & Technologies: Keras, TensorFlow, CNN, Image Augmentation, EarlyStopping

Models & Methods: Convolutional Neural Networks (custom architecture)

Outcome / Impact: Trained binary classifier to detect Melanoma from skin images

GitHub Repo: https://github.com/coolhead/CNNAssignment

Bird Species Classification (Advanced DL) (Ecology / Image Processing)

Status: In Progress Work in Progress

Tools & Technologies: PyTorch, SageMaker, Custom Datasets, ImageNet-style preprocessing

Models & Methods: CNN with transfer learning (ResNet-18 or similar)

Outcome / Impact: Species-level bird classification system (work-in-progress)

GitHub Repo: https://github.com/coolhead/bird-classification

Credit Card Fraud Detection (Finance / Security)

Status: In Progress Work in Progress

Tools & Technologies: Sklearn, XGBoost, SMOTE, Pandas, Seaborn

Models & Methods: XGBoost Classifier, Random Forest, Logistic Regression

Outcome / Impact: Placeholder - under development

GitHub Repo: https://github.com/coolhead/credit-card-fraud-detection