Group 1

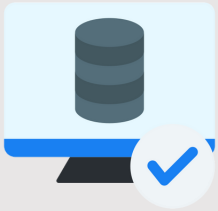
Optimizing MLOps for Enhanced Accident Prediction Models

With Real-time Prediction and model Monitoring for Traffic Accidents in the US

Our Vision

Apply best machine learning practices to enhance model training and maintenance over time.

Streamlined Workflow



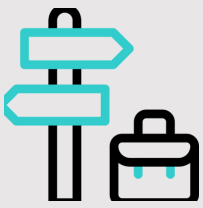
History Data Store
Amazon S3

Data Streaming
Apache Kafka

Data Processing
Apache Spark

Data Storage
Hive warehouse

Severity Prediction



Data Drift Detection

What we did?

Enhanced crisis management

- Real-time predictions of traffic accident severity
- Optimize resource allocation and response times

Effortless model maintenance

- Drift detection mechanism to streamline model re-training
- Alerting mechanism to notify variations in batch vs stream

How it's better?

Efficient Model Developement

- Long term sustainability of prediction accuracy
- Save man-hours to retrain and recompute

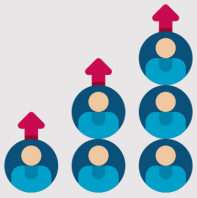
Enhanced Risk Assessment

- Simplify insurance claims and improve risk modeling
- Strengthen real-time risk assessment capabilities

MLOps PIPELINE

Design	Development	Delpoyment	Operations
			
Business Requirements	Data Engineering Model Building	Model Deployment	System Monitoring

Scalability



Reliability

Security

Compliance