AIOPS Live Projects

Instructors:

Avnish Yadav:

3+ years of experience in various domains such as data scientist, data analyst, database developer, and .net developer. Implemented various sophisticated business requirements, performed an analysis of various data to capture insights and hidden patterns. Fine and tuned various regression and classification-based algorithms for prediction. Implemented various ETL pipelines to fulfil the business requirement. Automated various machine learning pipelines such as data loading, data cleaning, data validation, model selection, model tuning, and model monitoring pipeline. Implemented machine learning pipeline in azure machine learning studio. I have a keen interest to solve complicated machine learning problems to fulfil business requirements.

Curriculum:

Building Machine learning Pipeline

• Overview of Machine Learning Pipeline

• Need for Machine Learning Pipeline

• Discussion on each step of ML Pipeline

• Introduction to Tensorflow Extend

• Task Communication with each other

• TFX component Internal Machenism

• Machine Learning Meta data Store and It's uses

• Introduction to Apache Beam

• TFX component internal uses of Apache Beam

Data Ingestion

• About Data Ingestion

• Retrvial of data and data versioning

Data Validation

• About Data Validation

• Data Validation using TensorFlow Data Validation

• Implementation of alter due to data drift

Data Preprocessing

• About Data Preprocessing

• Feature Engineering using Tensorflow Transform

Model Training and Model Tuning

• Discussion on model training

• Implementation of model training in ML Pipeline

• Discussion on model tunning

• Implementation of model tunning

Model Evaluation

• Overview of Model Evaluation

• Understanding useful metrics to evaluate model performance

• Capturing biases of model

• Versioning of Model

Model Deployment

- Model Deployment using TensorFlow Serving

- Simple Flask Implementation

- Implementation of monitoring deployed model

- Deployment using Kubernetes

Integration with Apache Beam and Apache Airflow

- Implementation of Pipeline

- Configure pipeline for Orchestration platform

Feedback Loop

- Understanding of feedback loop

- Implementation of feedback loop to improve models

Data Privacy for Machine Learning

- Understanding the need for data privacy

- Methods to implement data privacy

- Differential Privacy

- Federated Learning

- Encrypted machine Learning

Deployment of End to End Pipeline

- Cloud Deployment (AWS/ GCP/ AZure)