1. Data Ingestion Pipeline:

a. Design a data ingestion pipeline that collects and stores data from various sources such as databases, APIs, and streaming platforms.

b. Implement a real-time data ingestion pipeline for processing sensor data from IoT devices.

c. Develop a data ingestion pipeline that handles data from different file formats (CSV, JSON, etc.) and performs data validation and cleansing.

Ans:

i) <https://github.com/ayan-zz/credit_card/blob/main/src/components/data_ingestion.py>

ii) <https://github.com/ayan-zz/forest/blob/main/src/components/data_ingestion.py>

iii) <https://github.com/ayan-zz/sensor-data.git>

2. Model Training:

a. Build a machine learning model to predict customer churn based on a given dataset. Train the model using appropriate algorithms and evaluate its performance.

b. Develop a model training pipeline that incorporates feature engineering techniques such as one-hot encoding, feature scaling, and dimensionality reduction.

c. Train a deep learning model for image classification using transfer learning and fine-tuning techniques.

Ans:

i) <https://github.com/ayan-zz/credit_card/blob/main/src/components/data_transformation.py>

ii) <https://github.com/ayan-zz/credit_card/blob/main/notebook/EDA_credit_card.ipynb>

iii) <https://github.com/ayan-zz/ml-assignment/blob/main/Q5%20ML_assignment.ipynb>

iv) <https://github.com/ayan-zz/mercedes-benz-test-time/blob/main/Mercedes_benz_ML.ipynb>

3. Model Validation:

a. Implement cross-validation to evaluate the performance of a regression model for predicting housing prices.

b. Perform model validation using different evaluation metrics such as accuracy, precision, recall, and F1 score for a binary classification problem.

c. Design a model validation strategy that incorporates stratified sampling to handle imbalanced datasets.

i) <https://github.com/ayan-zz/ml-assignment/blob/main/Q5%20ML_assignment.ipynb>

ii) <https://github.com/ayan-zz/mercedes-benz-test-time/blob/main/Mercedes_benz_ML.ipynb>

iii) <https://github.com/ayan-zz/Credit-card-fraud/blob/main/capstone_AI_finance.ipynb>

4. Deployment Strategy:

a. Create a deployment strategy for a machine learning model that provides real-time recommendations based on user interactions.

b. Develop a deployment pipeline that automates the process of deploying machine learning models to cloud platforms such as AWS or Azure.

c. Design a monitoring and maintenance strategy for deployed models to ensure their performance and reliability over time.

Ans:

<https://github.com/ayan-zz/forest.git>

<https://github.com/ayan-zz/obesity.git>

<https://github.com/ayan-zz/Online-Shopper.git>

<https://github.com/ayan-zz/credit_card>

<https://www.youtube.com/watch?v=Tq6UAJEMOLw&t=4s>