1. **Goals:**

This project on is performing multi class classification on a Fashion – MNIST dataset. The goal of the project is to be able to make prediction on images given the pixels of each image. The different classes are T-shirt/top, Trouser, Pullover, Dress, Coat, Sandal, Shirt, Sneaker, Bag and Ankle boot.

1. **Clients:**

**Fashion and Apparel Industry:**

The Apparel Industry can use the model to predict the type of dress given the image of the dress. Also the e commerce apparel industry can use this to predict images from third party sellers where the company themselves do not have access to the dress. Given a greyscale image of the dress, the companies can use the model to make predictions.

1. **Data**:

Fashion-MNIST is a dataset of Zalando's article images—consisting of a training set of 60,000 examples and a test set of 10,000 examples. Each example is a 28x28 grayscale image, associated with a label from 10 classes. Zalando intends Fashion-MNIST to serve as a direct drop-in replacement for the original MNIST dataset for benchmarking machine learning algorithms. It shares the same image size and structure of training and testing splits.

Kaggle dataset: <https://www.kaggle.com/zalando-research/fashionmnist>

1. **Brief Outline(Approach):**

Initially setting up an Amazon GPU server for high computational tasks that needs to be performed for this project. Then perform some data analysis to see how the pixel data looks like for different classes of images. Use Deep Learning Libraries like Keras and TensorFlow to perform image recognition and make predictions.

1. **Deliverables:**

Dec 1 – Perform Data Quality Checks.

Dec 10– Perform initial exploratory analysis on the Data for different classes.

Dec 18 – Perform image recognition using Deep Learning.

Dec 28 – Fine tune the algorithm and do the submission