Project Proposal

Course Name: Pattern Recognition Laboratory

Course Code: CSI 416 (A)

Project Name

Fashion Cloth Detection using CNN

Team Members

Name	Student ID	Email
Md. Al Emran Hossain	011181144	mhossain181144@bscse.uiu.ac.bd
Mashuke Alam Jim	011181145	mjim181145@bscse.uiu.ac.bd
Azizul Hakim	011181149	ahakim181149@bscse.uiu.ac.bd
Mohammad Mostafizur Rahman	011181140	mrahman181140@bscse.uiu.ac.bd

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Problem Definition

In our project we want to predict real life images through the labels from this trending dataset named Fashion MNIST in Kaggle.

Dataset Description

Fashion MNIST dataset contains a training set of 60,000 examples and a test set of 10,000 examples. The dataset is used as a benchmark to validate different algorithms.

Attribute Information

i. Label: Unique identifier

Total 10 labels (0-9) in the label column.Each training example is assigned to one of the following labels:

- 0 T-shirt/top
- 1 Trouser
- 2 Pullover
- 3 Dress
- 4 Coat
- 5 Sandal
- 6 Shirt
- 7 Sneaker
- 8 Bag
- 9 Ankle boot

ii. Pixel [1-784]: The image has a corresponding 784 columns.

Note: There is no class column for the test dataset.

Dataset Credit: Zalando

Our proposed Approach

We will be using Convolutional Neural Network (CNN) over Fashion-MNIST dataset to establish our model. The dataset is almost processed, we will make slight changes to preprocess for the input of the model. Tensorflow is the state of the art library that we will use.

(I) To create our CNN model, we will initialise convolutional layers and MaxPooling function for each convolutional layer.

(II) After that we make an input for the neural network.

(III) The activation function will be ReLU. The rectified linear activation function or ReLU for short is a piecewise linear function that will output the input directly if it is positive, otherwise, it will output zero.

(V) After that we will create an output layer with 10 individual labels. We'll use the softmax activation function for multiclass classification.

This is how we've built our model.

(VI) After that we'll train the model by fit function and will try to predict the better accuracy of the model.