Assignment #2

Binary Classification & Multi-class Classification

Overview

- Classification is a core and fundamental task in computer vision.
- Part 1: In binary classification you will need to implement a logistic regression model that classifies whether a person is rich or poor.
- Part 2: In softmax regression you will design and train a softmax regression model from scratch that predicts the class label of a clothes image.
- Part 3: In multi-class classification you will design and train a multi-layer perceptron (MLP) and not using any convolution layers from scratch that predicts the class label of a clothes image.

Part 1: Binary Classification, Grading & Deadline

- 20 points
- Submit A2_binary_classification.ipynb to the CU.
- Due on Oct 9, 11:59 pm

Fashion-MNIST Dataset

- The dataset is a dataset of Zalando's article images.
- The Fashion-MNIST consists of a training set of 60,000 examples and a test set of 10,000 examples.
- It has 10 classes: 't-shirt', 'trouser', 'pullover', 'dress', 'coat', 'sandal', 'shirt', 'sneaker', 'bag', 'ankle boot’.
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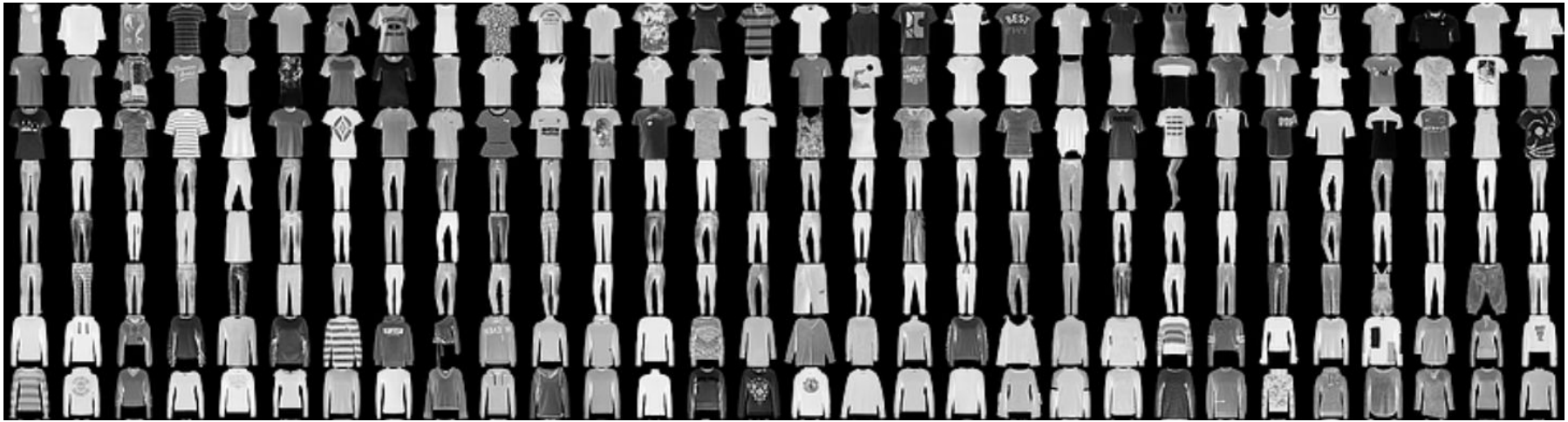
Fashion-MNIST Dataset

- Both softmax regression and the MLP use this dataset.



Things you cannot do

- You cannot submit results predicted by others.
- You cannot copy trained models from others.
- You cannot copy code from others, internet, GitHub ...
- You cannot collect more images to train your model in order to boost performance.
- You cannot use the weights of pre-trained model.

Part 2: Softmax regression, Grading & Deadline

- Submit A2_softmax_regression.ipynb to the CU.
- Grading:
  - 30 points
- Due on Oct 23, 11:59 pm

Part 3: The MLP, Grading & Deadline

- Submit your predictions on the test images to Kaggle for evaluation.
  - Use your SID as your team's name
  - Assignment score evaluation: Accuracy of your prediction
- Submit A2_multi_classes_classification.ipynb to the CU.
- Grading:
  - (accruay * 0.2) / 20 points
  - Bonus points to top 3 teams
- Due on Oct 23, 11:59 pm