Deep Learning and Natural Language Processing Project

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1 Abstract

This report investigates various classifiers applied to the Fashion-MNIST dataset, a more challenging version of the classic MNIST dataset.
The dataset contains 70,000 28x28 grayscale images of fashion products from 10 categories from a dataset of Zalando article images, with 7,000 images per category.
The dataset is commonly included in standard machine learning libraries. The data is normalized.
Evaluating on the dataset the k-nearest neighbors, decision trees are evaluated on the dataset. A conventional neural network (CNN) are also tested. Splitting the data after combining the train and test to new train, test and using 10-fold validation. Comparing the performance of the above classifiers neural network approach with traditional machine learning algorithms such as Logistic Regression, soft max, and Multi-Layer Perceptron (MLP).
The report discusses the project methodology, experimental results, and conclusions drawn from the comparison.

2 Introduction

The task involves building a classification model to categorize fashion items into predefined classes using the Fashion MNIST dataset. The report explores the effectiveness of neural network architectures in comparison to conventional machine learning techniques. The dataset consists of grayscale images of fashion items, each associated with a specific label indicating its category.

3 Related work and required background

Your Related work and required background text here.

4 Previous Attempts

Your previous attempts description text here.

5 Project Description

Splitting the data into test and train.

6 Simulation Results

Your experiments/simulation results text here.

7 Code

Your code text here

8 Conclusion

Your conclusion text here.