



StyleVision – A Deep Learning Approach for Fashion Wear Identification

ABSTRACT

- The project involves several stages, including data collection, exploration and preprocessing, model training and evaluation, and the development of a Flask-based web interface.
- A dataset of fashion wear images is collected and preprocessed with reshaping to ensure consistency and quality. The CNN model is then trained using this dataset to learn the patterns and characteristics of different fashion wear items.
- The model's performance is evaluated through various metrics, such as accuracy, loss and precision.
- Finally, a Flask-based web interface is built to provide users with a better experience, allowing them to upload images of fashion wear items and receive predictions from the trained model.

PROBLEM STATEMENT

- Manual identification and categorization of fashion wear can be time-consuming, subjective, and prone to errors. The problem addressed by the project "Fashion Wear Identification" is the need for an automated and accurate system that can detect and identify fashion items worn by individuals.



Problem Statement.

INTRODUCTION

- By training the model on a large dataset of related to fashion wears, the algorithm learns to extract meaningful features and patterns that correspond to different types of fashion wear.
- Through the use of CNN, the project achieves a high level of accuracy in detecting and identifying fashion items. By training the model on a large dataset of related to fashion wears, the algorithm learns to extract meaningful features and patterns that correspond to different types of fashion wear.
- Additionally, techniques with different number of layers are employed to generate variations of the training data, enhancing the model's ability to generalize well to unseen fashion items.

EXISTING SYSTEM

- The systems typically rely on traditional computer vision techniques or rule-based algorithms, which may struggle to accurately identify fashion items in complex and diverse scenarios. Furthermore, existing systems may lack the ability to adapt to changing fashion trends and styles, as they often rely on pre-defined categories and patterns. This can result sometimes in misclassification or incomplete identification of fashion wear items.
- Overall, the existing system for fashion wear identification is fragmented, relying on manual efforts and limited technology solutions or computerized systems with relying on other provided prioritised features. There is a need for an automated and accurate system that can effectively recognize and categorize fashion items

PROPOSED SYSTEM

- Leveraging deep learning techniques, specifically Convolutional Neural Networks (CNN), for accurate fashion wear identification.
- Collecting a diverse and comprehensive dataset of fashion wear images to train the model.
- Implementing distinguished number of layers as each model to enhance model generalization and reduce overfitting.
- The key features that can be obtained through this approach are:
 1. **Accurate Fashion Wear Identification**
 2. **Improved Efficiency**
 3. **Simplified User Experience**

DETAILS

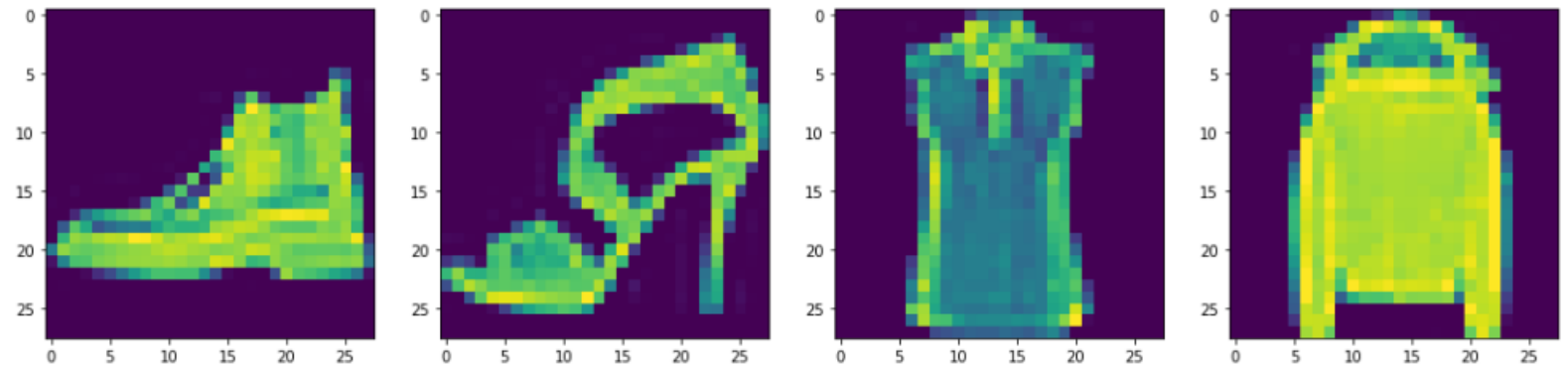
Models:

CNN with 1
Layer

CNN with 3
layers

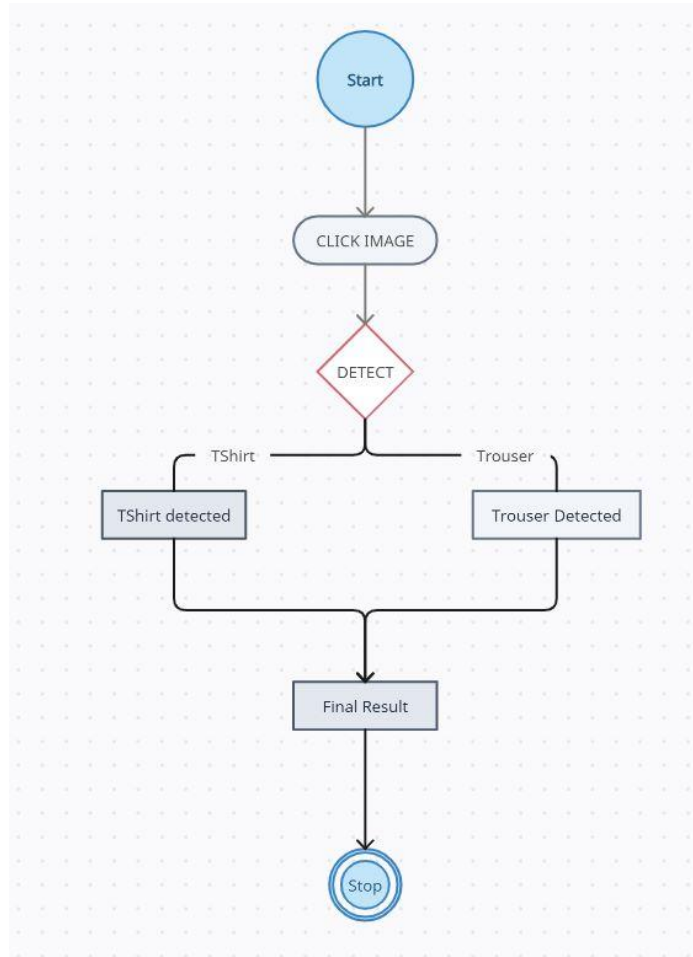
CNN with
Batch
Normalization

1. Find Image
2. Capture Image - Upload
3. Obtain results – (Category of Wore Item)



Subplots – Train Images (28, 28) plot shape

THE WORKFLOW DIAGRAM



An example work flow diagram in detecting if the item is T-shirt or a Trouser.

METHODOLOGY

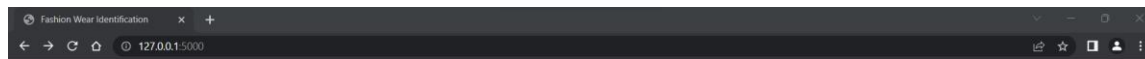


Dataset – Fashion MINST

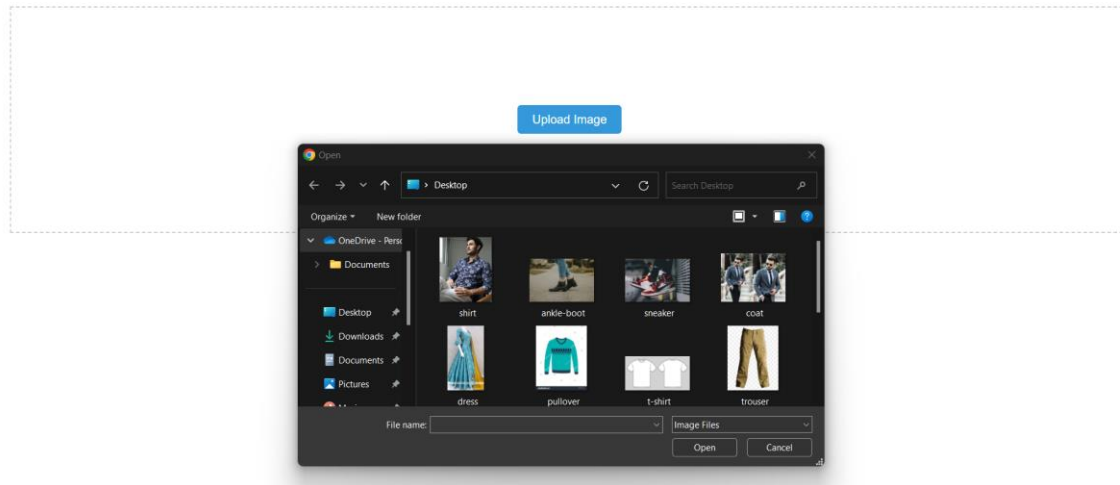
Train Data Shape – (60000, 785)

Test Data Shape – (10000, 785)

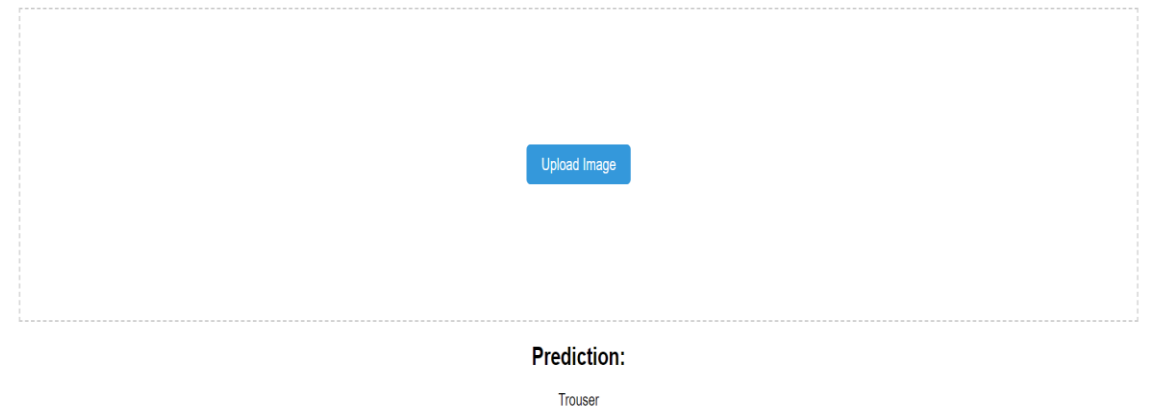
THE WEB VIEW



Fashion Wear Identification



Fashion Wear Identification



Run on <http://127.0.0.1:5000> – on Local System

TECHNOLOGY OVERVIEW

Application Platform:	Web Application
Programming Languages:	Python
User Interface Design:	HTML, CSS, JS
Back-end Application:	Flask
IDE:	Visual Studio Code, Jupyter Notebook



THANK YOU