Report

On

Fashion Object Detection

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Subject: Deep Learning

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Title of Project:

Fashion Object Detection

Abstract:

Recently, deep learning is emerging as a powerful tool and has become a leading machine learning tool in computer vision and image analysis. In this project, I am going to explain how we can train a neural network model for the task of fashion object detection with Tensor Flow. For those new to Tensor Flow, Tensor Flow is an end-to-end open-source platform for machine learning. It has a comprehensive and flexible ecosystem of tools, libraries, and community resources that allow researchers to push cutting-edge advancements in ML, and developers to easily build and deploy machine learning-based applications.

Notebook used:

Google Colab - Colaboratory, or "Colab" for short, is a product from Google Research. Colab allows anybody to write and execute arbitrary python code through the browser, and is especially well suited to machine learning, data analysis and education.

Technical requirements:

Sr. No.	Name	Description
1	KERAS	Keras is an open-source software library that provides a Python interface for artificial neural networks. Keras acts as an interface for the TensorFlow library.
2	CNN	Convolutional neural networks refer to a sub-category of neural networks: they, therefore, have all the characteristics of neural networks.
3	SEQUENTIAL	Sequence models are the machine learning models that input or output sequences of data. Sequential data includes text streams, audio clips, video clips, time-series data and etc.
4	TENSORFLOW	TensorFlow is a free and open-source software library for machine learning and artificial intelligence. It can be used across a range of tasks but has a particular focus on training and inference of deep neural networks.

Work Flow:

Step 1: Import Required libraries
Step 2: Import the Fashion MNIST dataset
Step 3: Preprocess The Data
Step 4: Setting Up Layers
Step 5: Compiling The Model
Step 6: Training Model
Step 7: Verify Predictions

Dataset Name:

Fashion MNIST dataset

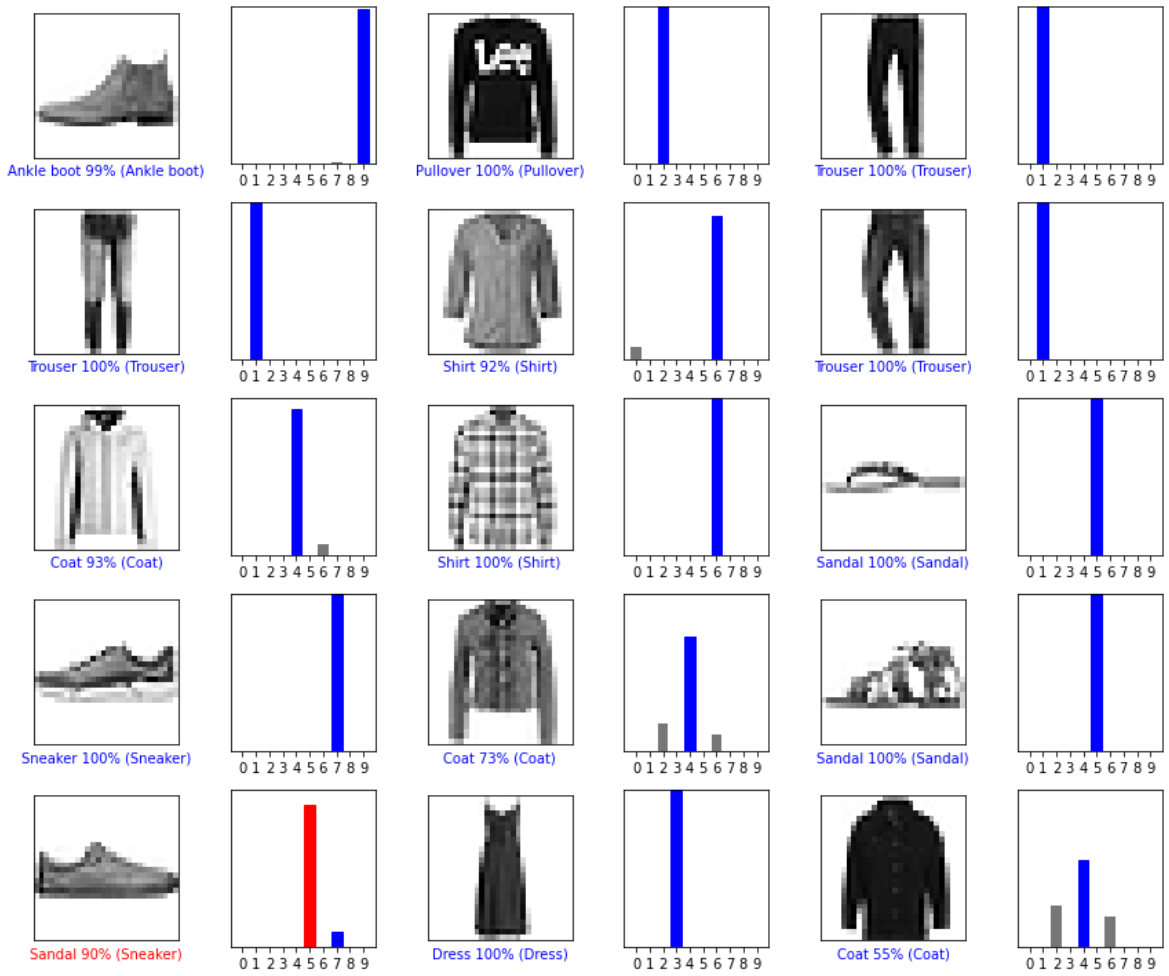
Dataset location:

http://yann.lecun.com/exdb/mnist/

GitHub Code link:

https://github.com/Darshan955/Fashoin-Object-Detection.git

Output:


Ankle boot 99% (Ankle boot)
Pullover 100% (Pullover)
Trouser 100% (Trouser)
Trouser 100% (Trouser)
Shirt 92% (Shirt)
Trouser 100% (Trouser)
Coat 93% (Coat)
Shirt 100% (Shirt)
Sandal 100% (Sandal)
Sneaker 100% (Sneaker)
Coat 73% (Coat)
Sandal 100% (Sandal)
Sandal 90% (Sneaker)
Dress 100% (Dress)
Coat 55% (Coat)
0 1 2 3 4 5 6 7 8 9