

## 1.Introduction

Fashion redefined with AI and virtual grooming

This project has a face recognition system which is built using CNN model and this helps in choosing the appropriate clothing desired.

Through this project we get a efficient way for choosing right outfit

## 2.Literature survey

We have many other websites like myntra, amazon etc but these websites dont have a face recognition system so these are not as efficient as the model built in this project

So my solution is building a model which first recognizes you and then suggests you the appropriate clothing.

## 3.Theoretical analysis

Block diagram:

Prerequisites

Datasets

Downloading watson studio

Build machine learning model

Build a chatbot

Integrate chatbot with python sdk

Integrate deep learning model with flask

Hardware/software designing

Ibm watson studio, kaggle dataset , IBM Academic Initiative Account ,IBM Cloud Account ,spyder ,Jupyter notebook ,Anaconda prompt.

## 4.Experimental investigations

Learned how to build a chatbot ,integrating it with python sdk ,built a CNN model with flask web application ,integrated deep learning model with flask.

## 5.Flowchart

Prerequiistes

Datasets

Downloading watson studio

Build a machine learning model

Built a chatbot

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Integrated deep learning model with flask

## 6.Result

```

Anaconda Prompt (anaconda) - python app1.py

(base) D:\Downloads>cd Flask App

(base) D:\Downloads>Flask App\python app1.py
2021-08-30 07:47:10.628997: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-08-30 07:47:10.629454: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2021-08-30 07:47:45.271488: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'nvcuda.dll'; dlerror: nvcuda.dll not found
2021-08-30 07:47:45.271593: W tensorflow/stream_executor/cuda/cuda_driver.cc:326] failed call to cuInit: UNKNOWN ERROR (303)
2021-08-30 07:47:45.274314: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:169] retrieving CUDA diagnostic information for host: DESKTOP-FRUACQ3
2021-08-30 07:47:45.274315: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:176] hostname: DESKTOP-FRUACQ3
2021-08-30 07:47:45.274949: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
* Serving Flask app "app1" (lazy loading)
* Environment: production
  WARNING: This is a development server. Do not use it in a production deployment.
  Use a production WSGI server instead.
* Debug mode: on
* Restarting with windowsapi reloader
2021-08-30 07:47:45.779316: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'cudart64_110.dll'; dlerror: cudart64_110.dll not found
2021-08-30 07:47:45.779475: I tensorflow/stream_executor/cuda/cudart_stub.cc:29] Ignore above cudart dlerror if you do not have a GPU set up on your machine.
2021-08-30 07:47:47.540690: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'nvcuda.dll'; dlerror: nvcuda.dll not found
2021-08-30 07:47:47.540819: W tensorflow/stream_executor/cuda/cuda_driver.cc:326] failed call to cuInit: UNKNOWN ERROR (303)
2021-08-30 07:47:47.544658: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:169] retrieving CUDA diagnostic information for host: DESKTOP-FRUACQ3
2021-08-30 07:47:47.544801: I tensorflow/stream_executor/cuda/cuda_diagnostics.cc:176] hostname: DESKTOP-FRUACQ3
2021-08-30 07:47:47.545124: I tensorflow/core/platform/cpu_feature_guard.cc:142] This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to use the following CPU instructions in performance-critical operations: AVX AVX2
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
* Debugger is active!
* Debugger PIN: 178-803-861
* Running on http://127.0.0.1:5000/ (Press CTRL+C to quit)
```

```

Spyder (Python 3.8)

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D:\Downloads\PythonSDK_Chatbot.py
PythonSDK_Chatbot.py app1.py index.html x

1  # -*- coding: utf-8 -*-
2  """
3  Created on Tue Aug 10 08:05:24 2021
4
5  @author: megha
6  """
7
8  import json
9  from ibm_watson import AssistantV2
10 from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
11
12 authenticator = IAMAuthenticator('-pbEZDCbeErs3bVhh95asAd7PKnLxvnf_VwvRL0-z-c')
13 assistant = AssistantV2(
14     version='2021-08-24',
15     authenticator=authenticator
16 )
17
18 assistant.set_service_url('https://api.eu-gb.assistant.watson.cloud.ibm.com')
19 response = assistant.create_session(
20     assistant_id='61ab5168-213e-4a59-a00d-a7743c0317c2'
21 ).get_result()
22 session_id = response
23 session_id = session_id["session_id"]
24 print(type(session_id))
25 print(session_id)
26
27 while True:
28     input_text = input("enter the text")
29
30     response = assistant.message(
31         assistant_id='61ab5168-213e-4a59-a00d-a7743c0317c2',
32         session_id=session_id,
33         input={
34             'message_type': 'text',
35             'text': input_text
36         }
37     ).get_result()
38
39 #print(json.dumps(response, indent=2))
40
41 print(response)
42 print(response["output"][0]["generic"][0]["text"])

Usage

Here you can get help of any object by pressing Ctrl+H in front of it, either on the Editor or the Console.

Help can also be shown automatically after writing a left parenthesis next to an object. You can activate this behavior in Preferences > Help.

New to Spyder? Read our tutorial
Variable explorer help Plots Files

Console I/A

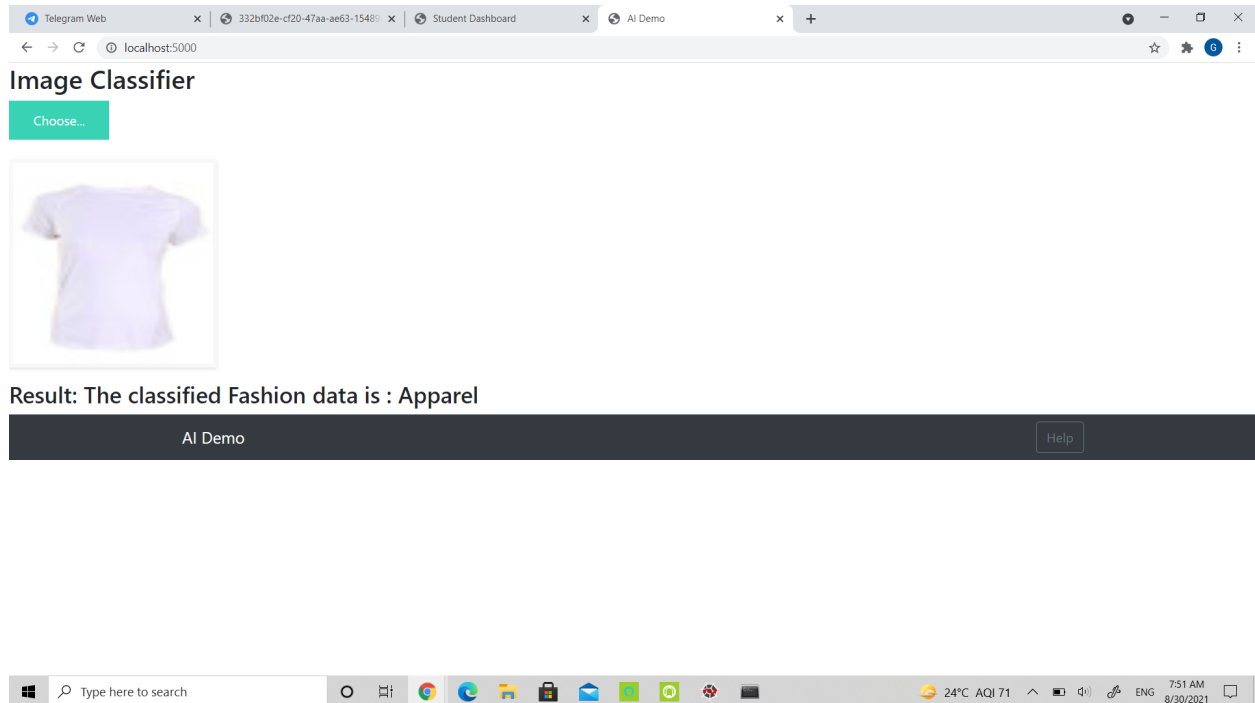
Python 3.8.8 (default, Apr 13 2021, 15:08:03) [MSC v.1916 64 bit (AMD64)]
Type "copyright", "credits" or "license()" for more information.

IDPython 7.22.0 -- An enhanced Interactive Python.

In [1]: runfile('D:/Downloads/PythonSDK_Chatbot.py', wdir='D:/Downloads')
<class 'str'>
b'2e2b0d43-9152-44e1-9f02-e7d8f564c4c2'

enter the textgood morning
{'output': [{'intents': [{'intent': 'greeting', 'confidence': 1}], 'entities': [{'entity': 'greeting', 'location': [0, 12], 'value': 'good morning', 'confidence': 1}], 'generic': [{'response_type': 'text', 'text': 'Good morning! I am a fashion bot. How can I help you?'}], 'user_id': 'b2e2b0d43-9152-44e1-9f02-e7d8f564c4c2'}]}
Good morning! I am a fashion bot. How can I help you?

enter the text
```



## 7.Advantages and disadvantages

This project is a efficient way while compared to other websites due to its unique regonization and chatbot but this also may dont give appropriate outcomes.

## 8.Applications

This can be applied at fashion industry

## 9.Conclusion

This unique virtual grooming is growing now a days so there is a need for efficient platform.In this project I made it unique by adding virtual recognition and chatbot

## 10.Future scope

By making the recognition more precise by the development of artificial intellegence technology we can enhance this project

## 11.Bibilography

```
localhost:8888/notebooks/CNN.ipynb

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In [20]: !pip install tensorflow

Requirement already satisfied: tensorflow in e:\anaconda\lib\site-packages (2.5.0)
Requirement already satisfied: google-pasta==0.2 in e:\anaconda\lib\site-packages (from tensorflow) (0.2.0)
Requirement already satisfied: flatbuffers==1.12.0 in e:\anaconda\lib\site-packages (from tensorflow) (1.12)
Requirement already satisfied: wheel==0.35 in e:\anaconda\lib\site-packages (from tensorflow) (0.36.2)
Requirement already satisfied: opt-einsum==3.3.0 in e:\anaconda\lib\site-packages (from tensorflow) (3.3.0)
Requirement already satisfied: grpcio==1.34.0 in e:\anaconda\lib\site-packages (from tensorflow) (1.34.1)
Requirement already satisfied: h5py==3.1.0 in e:\anaconda\lib\site-packages (from tensorflow) (3.1.0)
Requirement already satisfied: keras-preprocessing==1.1.2 in e:\anaconda\lib\site-packages (from tensorflow) (1.1.2)
Requirement already satisfied: gast==0.4.0 in e:\anaconda\lib\site-packages (from tensorflow) (0.4.0)
Requirement already satisfied: astunparse==1.6.3 in e:\anaconda\lib\site-packages (from tensorflow) (1.6.3)
Requirement already satisfied: protobuf==3.9.2 in e:\anaconda\lib\site-packages (from tensorflow) (3.17.3)
Requirement already satisfied: termcolor==1.1.0 in e:\anaconda\lib\site-packages (from tensorflow) (1.1.0)
Requirement already satisfied: typing-extensions==3.7.4 in e:\anaconda\lib\site-packages (from tensorflow) (3.7.4.3)
Requirement already satisfied: six==1.15.0 in e:\anaconda\lib\site-packages (from tensorflow) (1.15.0)
Requirement already satisfied: tensorboard==2.5 in e:\anaconda\lib\site-packages (from tensorflow) (2.5.0)
Requirement already satisfied: keras-nightly==2.5.0.dev in e:\anaconda\lib\site-packages (from tensorflow) (2.5.0.dev2021032900)
Requirement already satisfied: numpy==1.19.2 in e:\anaconda\lib\site-packages (from tensorflow) (1.19.5)
Requirement already satisfied: absl-py==0.10 in e:\anaconda\lib\site-packages (from tensorflow) (0.13.0)
Requirement already satisfied: wrapt==1.12.1 in e:\anaconda\lib\site-packages (from tensorflow) (1.12.1)
Requirement already satisfied: tensorflow-estimator<2.6.0,>=2.5.0rc0 in e:\anaconda\lib\site-packages (from tensorflow) (2.5.0)
Requirement already satisfied: tensorboard-data-server<0.7.0,>=0.6.0 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (0.6.1)
Requirement already satisfied: setuptools==41.0.0 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (52.0.0.post20210125)
Requirement already satisfied: werkzeug==0.11.15 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (1.0.1)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (0.4.5)
Requirement already satisfied: tensorboard-plugin-wit==1.6.0 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (1.8.0)
Requirement already satisfied: markdown==2.6.8 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (3.3.4)
Requirement already satisfied: requests<2.3.1, >=2.21.0 in e:\anaconda\lib\site-packages (from tensorflow==2.5->tensorboard) (2.25.1)
Requirement already satisfied: rsa<4.7.2, >=3.1.4 in e:\anaconda\lib\site-packages (from google-auth<2,>=1.6.3->tensorboard==2.5->tensorflow) (4.7.2)
Requirement already satisfied: requests-oauthlib==0.7.0 in e:\anaconda\lib\site-packages (from google-auth-oauthlib<0.5,>=0.4.1->tensorboard==2.5->tensorflow) (1.3.0)
Requirement already satisfied: pyasn1<0.5.0,>=0.4.6 in e:\anaconda\lib\site-packages (from pyasn1-modules==0.2.1->google-auth<2,>=1.6.3->tensorboard==2.5->tensorflow) (0.4.8)
Requirement already satisfied: idna<3,>=2.5 in e:\anaconda\lib\site-packages (from requests<3,>=2.21.0->tensorboard==2.5->tensorflow) (2.10)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in e:\anaconda\lib\site-packages (from requests<3,>=2.21.0->tensorboard==2.5->tensorflow) (1.26.4)
Requirement already satisfied: chardet<5,>=3.0.2 in e:\anaconda\lib\site-packages (from requests<3,>=2.21.0->tensorboard==2.5->tensorflow) (4.0.0)
Requirement already satisfied: certifi>=2017.4.17 in e:\anaconda\lib\site-packages (from requests<3,>=2.21.0->tensorboard==2.5->tensorflow) (2020.12.5)
Requirement already satisfied: oauthlib==3.0.0 in e:\anaconda\lib\site-packages (from requests-oauthlib==0.7.0->google-auth-oauthlib<0.5,>=0.4.1->tensorboard==2.5->tensorflow) (3.1.1)

In [35]: from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense
from tensorflow.keras.layers import Convolution2D
from tensorflow.keras.layers import MaxPooling2D
from tensorflow.keras.layers import Flatten

In [36]: from tensorflow.keras.preprocessing.image import ImageDataGenerator
train_datagen = ImageDataGenerator(rescale = 1./255, shear_range = 0.2, zoom_range = 0.2, horizontal_flip = True)
test_datagen = ImageDataGenerator(rescale = 1./255)

In [37]: x_train = train_datagen.flow_from_directory(r"D:\Downloads\train set", target_size=(64,64), batch_size=32, class_mode="categorical")
x_test = test_datagen.flow_from_directory(r"D:\Downloads\test set", target_size=(64,64), batch_size=32, class_mode="categorical")

Found 436 images belonging to 4 classes.
Found 215 images belonging to 4 classes.

In [38]: x_train.class_indices

Out[38]: {'Accessories': 0, 'Annarel': 1, 'Shoes': 2, 'Matches': 3}
```

```
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```
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In [38]: x_train.class_indices
Out[38]: {'Accessories': 0, 'Apparel': 1, 'Shoes': 2, 'Watches': 3}

Type Markdown and LaTeX:  $\alpha^2$ 

In [39]: model = Sequential()

In [40]: model.add(Convolution2D(32,(3,3),input_shape=(64,64,3),activation="relu"))

In [41]: model.add(MaxPooling2D(pool_size=(2,2)))

In [42]: model.add(Flatten())

In [43]: model.add(Dense(units=128,kernel_initializer="random_uniform",activation="relu"))

In [44]: model.add(Dense(units=128,kernel_initializer="random_uniform",activation="relu"))

In [45]: model.add(Dense(units=4,kernel_initializer="random_uniform",activation="softmax"))

In [46]: model.compile(loss="categorical_crossentropy",optimizer="adam",metrics=["accuracy"])

In [49]: model.fit_generator(x_train, steps_per_epoch=13, epochs=25, validation_data=(x_test, validation_steps=6))

Epoch 1/25
13/13 [=====] - 1s 69ms/step - loss: 0.1202 - accuracy: 0.9554 - val_loss: 1.6178 - val_accuracy:
```

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```
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Epoch 1/25
13/13 [=====] - 1s 69ms/step - loss: 0.1202 - accuracy: 0.9554 - val_loss: 1.6178 - val_accuracy: 0.7500
Epoch 2/25
13/13 [=====] - 1s 74ms/step - loss: 0.0848 - accuracy: 0.9802 - val_loss: 1.7453 - val_accuracy: 0.7604
Epoch 3/25
13/13 [=====] - 1s 75ms/step - loss: 0.0644 - accuracy: 0.9802 - val_loss: 1.6037 - val_accuracy: 0.7656
Epoch 4/25
13/13 [=====] - 1s 76ms/step - loss: 0.0600 - accuracy: 0.9876 - val_loss: 2.0412 - val_accuracy: 0.7448
Epoch 5/25
13/13 [=====] - 1s 74ms/step - loss: 0.0663 - accuracy: 0.9777 - val_loss: 1.8329 - val_accuracy: 0.7656
Epoch 6/25
13/13 [=====] - 1s 75ms/step - loss: 0.0647 - accuracy: 0.9851 - val_loss: 2.1316 - val_accuracy: 0.7188
Epoch 7/25
13/13 [=====] - 1s 72ms/step - loss: 0.0631 - accuracy: 0.9876 - val_loss: 2.0545 - val_accuracy: 0.7552
Epoch 8/25
13/13 [=====] - 1s 76ms/step - loss: 0.0414 - accuracy: 0.9876 - val_loss: 2.3695 - val_accuracy: 0.7135
Epoch 9/25
13/13 [=====] - 1s 74ms/step - loss: 0.0521 - accuracy: 0.9876 - val_loss: 2.4535 - val_accuracy: 0.6823
Epoch 10/25
13/13 [=====] - 1s 75ms/step - loss: 0.0488 - accuracy: 0.9901 - val_loss: 2.4513 - val_accuracy: 0.7188
Epoch 11/25
```

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```

0.7448
Epoch 17/25
13/13 [=====] - 1s 77ms/step - loss: 0.0523 - accuracy: 0.9802 - val_loss: 2.5105 - val_accuracy: 0.7344
Epoch 18/25
13/13 [=====] - 1s 76ms/step - loss: 0.0182 - accuracy: 0.9975 - val_loss: 2.3374 - val_accuracy: 0.7552
Epoch 19/25
13/13 [=====] - 1s 79ms/step - loss: 0.0169 - accuracy: 1.0000 - val_loss: 2.5538 - val_accuracy: 0.7552
Epoch 20/25
13/13 [=====] - 1s 74ms/step - loss: 0.0276 - accuracy: 0.9926 - val_loss: 2.6280 - val_accuracy: 0.7292
Epoch 21/25
13/13 [=====] - 1s 77ms/step - loss: 0.0167 - accuracy: 0.9976 - val_loss: 2.5073 - val_accuracy: 0.6979
Epoch 22/25
13/13 [=====] - 1s 73ms/step - loss: 0.0262 - accuracy: 0.9926 - val_loss: 2.9093 - val_accuracy: 0.7292
Epoch 23/25
13/13 [=====] - 1s 73ms/step - loss: 0.0118 - accuracy: 0.9975 - val_loss: 2.8356 - val_accuracy: 0.7500
Epoch 24/25
13/13 [=====] - 1s 78ms/step - loss: 0.0122 - accuracy: 1.0000 - val_loss: 2.9118 - val_accuracy: 0.7344
Epoch 25/25
13/13 [=====] - 1s 72ms/step - loss: 0.0144 - accuracy: 0.9950 - val_loss: 2.4417 - val_accuracy: 0.7552

Out[49]: <tensorflow.python.keras.callbacks.History at 0x23b87905af0>

In [50]: model.save("Fashion.h5")

In [ ]:

```

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Spyder (Python 3.8)

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D:\Downloads\PythonSDK\_Chatbot.py C:\Users\megha

```

1  """
2  Created on Tue Aug 10 08:05:24 2021
3
4  @author: megha
5  """
6
7
8  import json
9  from ibm_watson import AssistantV2
10 from ibm_cloud_sdk_core.authenticators import IAMAuthenticator
11
12 authenticator = IAMAuthenticator('-pbEZDCheErs3bVhh95asnd7PKmIxxvF_VwvRLa-z-c')
13 assistant = AssistantV2(
14     version='2021-08-1d',
15     authenticator=authenticator
16 )
17
18 assistant.set_service_url('https://api.eu-gb.assistant.watson.cloud.ibm.com')
19 response = assistant.create_session(
20     assistant_id='61ab5168-213e-4a59-a00d-a7743c0317c2'
21 ).get_result()
22 session_id = response
23 session_id = session_id["session_id"]
24 print(type(session_id))
25 print(session_id)
26
27 while True:
28     input_text = input("enter the text")
29
30     response = assistant.message(
31         assistant_id='61ab5168-213e-4a59-a00d-a7743c0317c2',
32         session_id=session_id,
33         input={
34             'message_type': 'text',
35             'text': input_text
36         }
37     ).get_result()
38
39 #print(json.dumps(response, indent=2))
40
41 print(response)
42 print(response["output"][0]["generic"][0]["text"])

```

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Variable explorer | Help | Python Files

Console I/A

Python 3.8.8 (default, Apr 13 2021, 15:08:03) [MSC v. 1916 64 bit (AMD64)]  
Type "copyright", "credits" or "license()" for more information.

IPython 7.22.0 -- An enhanced Interactive Python.

In [1]:

Meeting now 29:49

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