

Python Full Stack

- ☐ ASCII Photo Converter - 30 Jan
- ☐ LMS using Django/Flask - 3 Feb
- ☐ Scrapping
 - OBS Studio

21 Jan

`python -m venv LPU` → To create a virtual environment

`.\LPU\bin\activate` → To activate the environment

`deactivate` → to deactivate the environment

`rm -r LPU` - > to remove directory recursively, all the file & sub folders

`mv oldname newname` → To rename the Folder

'm' → stands for message

'venv' → virtual environment

22 Jan

Wider Range → Class

Derived → Objects

Animals → Class

Lion, Tiger → Objects

!' → Location, LEKE AAO

`python filename.py` → To run the file



Supervised Learning → Where we have both input and output. $y = mx + c$. Labeled Data.

Unsupervised Learning → Where we don't have the output. Not Labeled data. The model try to find the pattern.

Reinforcement Learning → Which tries to learn from the experience. Reward based learning.



Overfitting → Where the model gives a lot of accuracy on the training data but fails in testing data.

Underfitting → Which fails at the training data as well as testing data.

TradeOff → Which performs well on training data as well as testing data.

sklearn → warehouse of ML.

| PV | | | |
|-----|-----|-------|-------|
| Yes | No | | |
| | | TP | FN |
| AV | Yes | _____ | _____ |
| | No | FP | TN |
| | | _____ | _____ |

| PV | | | |
|----|-----|-------|-------|
| No | Yes | | |
| | | TN | FP |
| AV | No | _____ | _____ |
| | Yes | FN | TP |
| | | _____ | _____ |

| AV | | | |
|-----|-----|-------|-------|
| Yes | No | | |
| | | TP | FP |
| PV | Yes | _____ | _____ |
| | No | FN | TN |
| | | _____ | _____ |

| AV | | | |
|----|-----|-------|-------|
| No | Yes | | |
| | | TN | FN |
| | | _____ | _____ |

| | | | | | |
|-----|--|-------|--|-------|--|
| No | | _____ | | _____ | |
| PV | | FP | | TP | |
| Yes | | _____ | | _____ | |



Accuracy Score $\rightarrow \frac{TP+TN}{TP+TN+FP+FN}$

Precision $\rightarrow \frac{TP}{TP+FP}$ //Predicted mai kitna sahi predict kia.

Recall $\rightarrow \frac{TP}{TP+FN}$ //Actual mai kitna sahi predict kia.

F1 Score $\rightarrow 2 * (\frac{Precision * Recall}{Precision + Recall})$

`from sklearn.metrics import classification_matrix` \rightarrow Classification Matrix

23 Jan

```
from sklearn.metrics import confusion_matrix
av = ['dog','dog','dog','dog','not_dog','not_dog','not_dog','not_dog']
pv = ['dog','dog','dog','dog','not_dog','not_dog','not_dog','not_dog']
print(confusion_matrix(pv,av))
```

| | |
|---|---|
| 4 | 0 |
| 0 | 4 |

```
av = ['dog','dog','dog','dog','dog','not_dog','dog','not_dog','not_dog','not_dog']
pv = ['dog','dog','dog','dog','dog','dog','not_dog','not_dog','not_dog','not_dog']
print(confusion_matrix(pv,av))
```

| | |
|---|---|
| 5 | 1 |
| 1 | 3 |

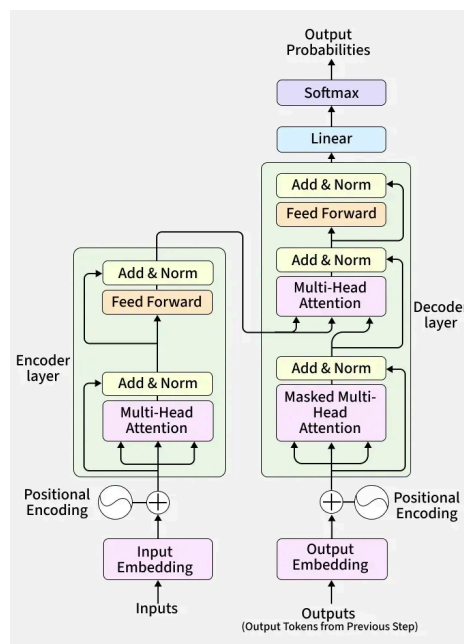
"Transformers in Python" **primarily refers to the use of the powerful Hugging Face `transformers` library, which provides access to thousands of state-of-the-**

art pre-trained AI models for various tasks



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Add Norm → Minimizing Errors



| | |
|------|-----------------|
| ANN | Tabular Data |
| CNN | Image Data |
| RNN | Sequential Data |
| ISTM | No Memory |

DTPd4AF → Delhi mai ek TT ne pakda 4 log Afghanistan ke.

| | | |
|----|---------------------------------------|--|
| D | Defination | Linear Regression, etc. |
| Tp | Type of Problem | Supervised, UnSupervised, Clustering, etc. |
| Td | Type of Data | Labeled, UnLabeled. |
| 4A | Aim, Approach, Algorithm, Application | |
| F | Feedback | |

What is the type of problem for Reinforcement Learning?

What is the type of data for Reinforcement Learning?

Pipeline → Machine Learning Pipeline is a systematic workflow designed to automate the process of building, training, and deploying ML models.

Django

Django is software you can use to develop web applications quickly and efficiently

```
pip install django
```

```
django-admin startproject project .
```

```
python manage.py runserver
```

| | |
|--------------------|--|
| wsgi.py | Web Server Gateway Interface. An entry-point for WSGI-compatible web servers to serve your project. See How to deploy with WSGI for more details. |
| asgi.py | (Asynchronous Server Gateway Interface). An entry-point for ASGI-compatible web servers to serve your project. See How to deploy with ASGI for more details. |
| urls.py | The URL declarations for this Django project; a “table of contents” of your Django-powered site. You can read more about URLs in URL dispatcher . |
| settings.py | Settings/configuration for this Django project. Django settings will tell you all about how settings work. |
| __init__.py | An empty file that tells Python that this directory should be considered a Python package. If you’re a Python beginner, read more about packages in the official Python docs. |
| mysite/ | A directory that is the actual Python package for your project. Its name is the Python package name you’ll need to use to import anything inside it (e.g. <code>mysite.urls</code>). |
| manage.py | A command-line utility that lets you interact with this Django project in various ways. You can read all the details about manage.py in django-admin and manage.py . |

24 Jan

Inheritance

- Single
- Multiple
- Multi Level
- Hierarchical
- Hybrid

2nd Project → LMS, using Django/Flask.

27 Jan

Transformer

Attention is the engine of Transformer. Combination of Encoder & Decoder.

One Encoder consists of Feed Forward and MHA

One Decoder consists of Feed Forward, MHA and mMHA.

First step is **Tokenization** :- Mainly word based Tokenization, means Character Based.

Second step is to give **Position** to each word, to identify uniquely.

Third Step is **Embedding**, converting string to number. And this serves as the input.

Word has feelings.

Query Key Value(QKV) :-

Activation Function :- To Normalize, Silu, Elu