Instagram Fake Profile Detection

Introduction :

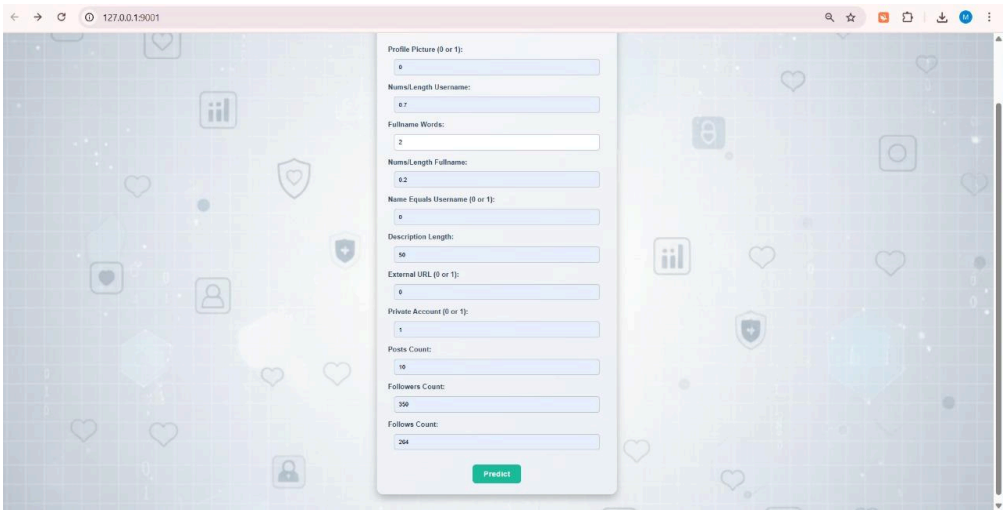
A Flask-based deep learning web application that predicts whether an Instagram account is fake or real using profile metrics such as username patterns, follower counts, post activity, and other parameters.

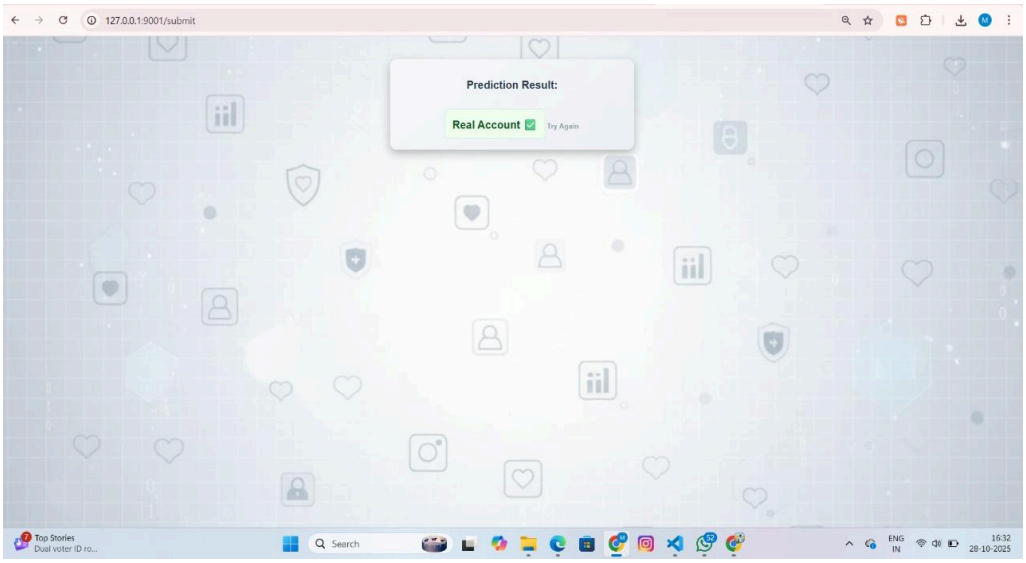
About The Project :

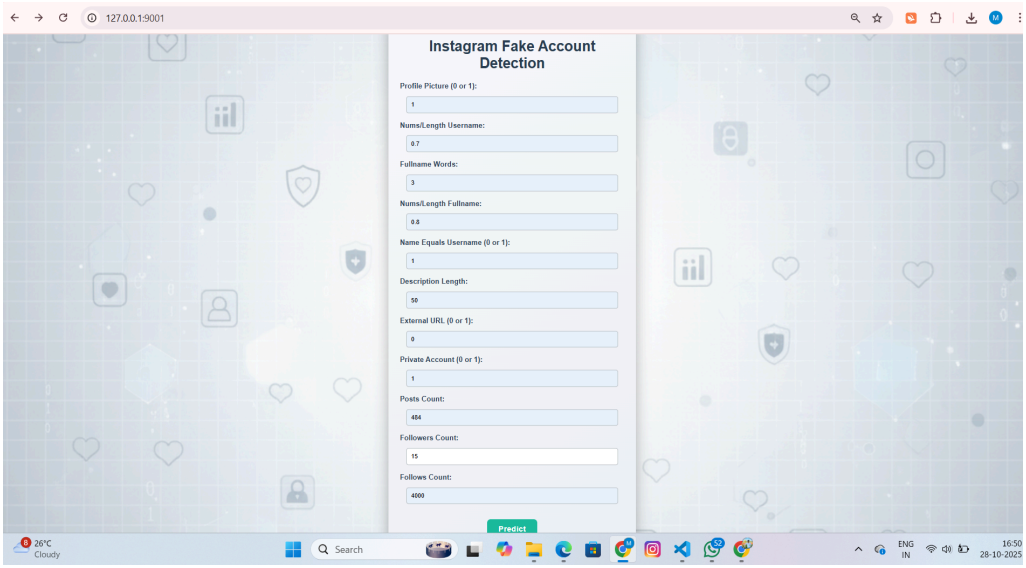
1) The Problem Chosen:
In today's digital world, fake Instagram accounts are being used for spreading misinformation, scams, and misleading promotions. These accounts are often difficult to identify manually and cause trust issues in online communities. Within our college and social circles, several people have reported receiving follow requests and messages from fake profiles — making it a growing concern for online privacy and authenticity.

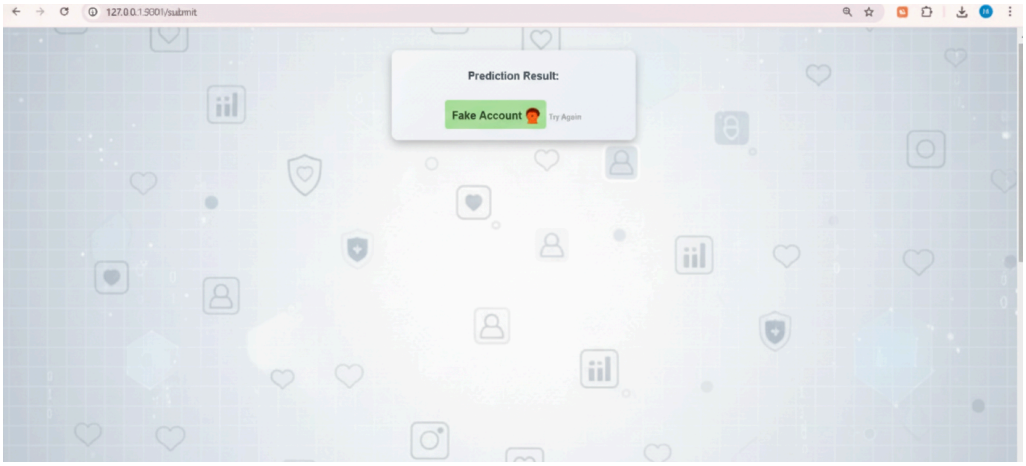
2) Solution Implemented:
To address this issue, I developed a Fake Profile Detection Web App using Flask and Deep Learning. This web app analyzes Instagram account metrics such as profile picture, followers count, following count, bio length, username ratio, and other key parameters to determine whether an account is Real or Fake. The model was trained using custom data and normalized metrics, then deployed locally using Flask. Users can input profile details manually, and the app predicts whether the account is genuine or suspicious. This system can help individuals and institutions identify fake accounts and protect online interactions.

3) Before and After Proof:
Before:
Many users, including my college peers, were unaware of how to identify fake accounts on Instagram. They relied on manual inspection, which was inconsistent and time-consuming.
After:
After implementing this web app, users can now easily enter profile details and instantly know whether the account is real or fake. This automated solution not only saves time but also increases digital awareness among students.
Evidence:


127.0.0.1:9001
Profile Picture (0 or 1):
0
Nums/Length Username:
0.7
Fullname Words:
2
Nums/Length Fullname:
0.2
Name Equals Username (0 or 1):
0
Description Length:
50
External URL (0 or 1):
0
Private Account (0 or 1):
1
Posts Count:
10
Followers Count:
350
Follows Count:
264
Predict


127.0.0.1:9001/submit
Prediction Result:
Real Account
Try Again
Top Stories
Dual voter ID ro...
Search
ENG
IN
16:32
28-10-2025


127.0.0.1:9001
Instagram Fake Account Detection
Profile Picture (0 or 1):
1
Nums/Length Username:
0.7
Fullname Words:
3
Nums/Length Fullname:
0.8
Name Equals Username (0 or 1):
1
Description Length:
50
External URL (0 or 1):
0
Private Account (0 or 1):
1
Posts Count:
484
Followers Count:
15
Follows Count:
4000
Predict
26°C
Cloudy
Search
ENG
IN
16:50
28-10-2025



Conclusion: The Instagram Fake Profile Detection project demonstrates how Artificial Intelligence and Machine Learning can be used to solve real-world social problems within a short time frame. It promotes awareness of digital safety and provides a reliable, quick way to identify fake profiles. This project can be further enhanced by connecting to Instagram APIs for real-time detection.

Features :

- Detects fake vs real Instagram accounts using ML model.
- Interactive web interface using Flask.
- User-friendly form for entering Instagram account data.
- Displays prediction results in an intuitive HTML page.
- Includes visualization-ready dataset (train.csv & test.csv).

Tech Stack :

- Python
- Flask
- Scikit-learn / TensorFlow (for model training)
- HTML, CSS (for frontend templates)
- Pandas, NumPy (for data processing)

⚙️ **Project Structure**

```
Instagram_Fake_Profile_Detection/
```

```
│
├── datasets/
│   ├── train.csv
│   ├── test.csv
│   └── datatrain.py
│
├── model/
│   ├── fake_detection_model.h5
│   ├── model.py
│   └── scaler.pkl
│
├── static/
│   ├── background.pn
│   └── style.css
│
├── templates/
│   ├── index99.html
│   └── result99.html
│
├── App.py
├── requirements.txt
└── README.md
```

Setup Instructions :

1. Create Virtual Environment
```bash
python -m venv venv
venv\Scripts\activate  # For Windows
source venv/bin/activate  # For macOS/Linux
```

2. Install Dependencies
```bash
pip install -r requirements.txt
```

3. Generate Dataset (if not already created)
```bash
python datasets/datatrain.py
```

4. Run the Flask App
```bash
python App.py
```

5. Access Web App
Open your browser and go to 👉 **http://127.0.0.1:9001/**

Example Inputs :

Fake Account Example
Feature	Value
Profile Picture	0
Nums/Length Username	0.8
Fullname Words	1
Nums/Length Fullname	0.7
Name Equals Username	1
Description Length	10
External URL	1
Private Account	0
Number of Posts	10
Followers	30
Follows	4000

Real Account Example
Feature	Value
Profile Picture	1
Nums/Length Username	0.2
Fullname Words	3
Nums/Length Fullname	0
Name Equals Username	0
Description Length	60
External URL	0
Private Account	1
Number of Posts	20
Followers	4200
Follows	800

Output :

- The app predicts whether the account is **FAKE** or **REAL**.
- Displays results on `result99.html` with a clear status message.

Before & After Proof :

- Before: Manual checking of fake accounts based on visual judgment.
- After: Automated fake account detection using trained ML model.

Future Improvements :

- Integration with Instagram API for real-time profile data fetching.
- Add graph-based visualization of fake/real account distribution.
- Deploy on Render or Hugging Face Spaces for live demo.