

# USER MANUAL

## “DeepScan Pro – A DeepFake Detector”

"Protecting Truth in a World of Fakes."

### Table of Contents

Sr. No.	Section	Page No.
1.	<u>Introduction</u>	1
2.	<u>System Requirements</u>	2
3.	<u>Installation Instructions</u>	2
4.	<u>Key Features</u>	3
5.	<u>User Interface Overview</u>	3
6.	<u>How to Use DeepScan Pro</u>	5
7.	<u>Supported Media Formats</u>	9
8.	<u>Troubleshooting Guide</u>	9
9.	<u>Frequently Asked Questions (FAQs)</u>	9
10.	<u>Contact and Support</u>	10
11.	<u>Project Developers – DeepScan Pro: A DeepFake Detector</u>	10
12.	<u>Privacy &amp; Data Policy</u>	11
13.	<u>Version and Updates</u>	11

## 1. Introduction

DeepScan Pro is a robust and intelligent deepfake detection system developed to identify manipulated media in the form of images, videos, and audio. It uses state-of-the-art machine learning and deep learning techniques to analyze spatial, temporal, and spectral inconsistencies and offers high-accuracy classification in real-time. The user-friendly interface ensures accessibility for technical and non-technical users alike.

### Target Users:

- Law enforcement and forensic experts
- Journalists and fact-checkers
- Media organizations
- Cybersecurity professionals

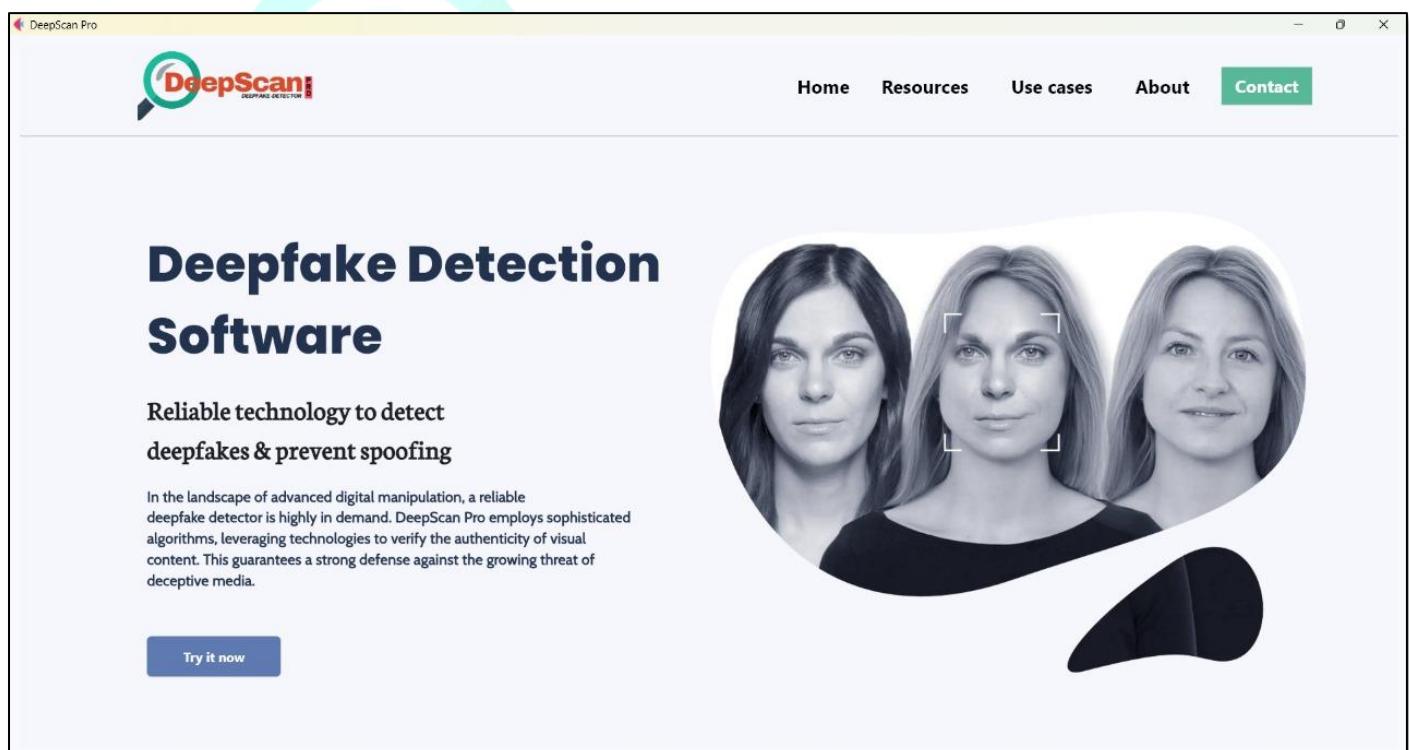


Fig a. Home Page



Fig b. DeepScan Pro Logo

## 2. System Requirements

### 2.1 Hardware Requirements

Component	Minimum	Recommended
CPU	Intel i5 (8th Gen) / Ryzen 5	Intel i7/i9 / Ryzen 7/9
RAM	8 GB	16 GB or higher
Storage	512 GB HDD/SSD	1 TB SSD
GPU	Not required	NVIDIA GTX 1660 / RTX 2060 or higher

### 2.2 Software Requirements

- OS: Windows 10/11, Ubuntu, or macOS
- Python 3.8 or later
- Git and GitHub
- Firebase account (for user authentication)
- Python Libraries: TensorFlow, PyTorch, OpenCV, Librosa, PIL, Flet, DeepFace, Transformers, etc.

## 3. Installation Instructions

### Step 1: Clone the Repository

```
git clone https://github.com/dhananjaya2003/DeepScan_Pro_Deepfake-Detector
```

### Step 2: Create and Activate Virtual Environment

```
python -m venv env
```

```
source env/bin/activate # Windows: env\Scripts\activate
```

### Step 3: Install Required Libraries

```
pip install -r requirements.txt
```

#### Step 4: Configure Firebase

- Create a Firebase project
- Enable Email/Password authentication and Realtime Database
- Replace Firebase config in main.py

#### Step 5: Run the Application

```
python main.py
```

→ App opens in browser via Flet interface.

### 4. Key Features

- Multi-modal deepfake detection (image, audio, video)
- Real-time detection with confidence scores
- AI models: Swin Transformer (image), Wav2Vec2 + BiLSTM (audio), ResNeXt + LSTM (video)
- Visualization of predictions
- Custom dataset support including Indian regional content.

### 5. User Interface Overview

The UI, built with Flet, is minimalistic and intuitive.

#### Main Components:

- **Login/Signup Page** – For secure access.
- **Home Page** – Upload media and view results.
- **Results Section** – Shows real/fake prediction.
- **Logout Option** – Ends session securely.

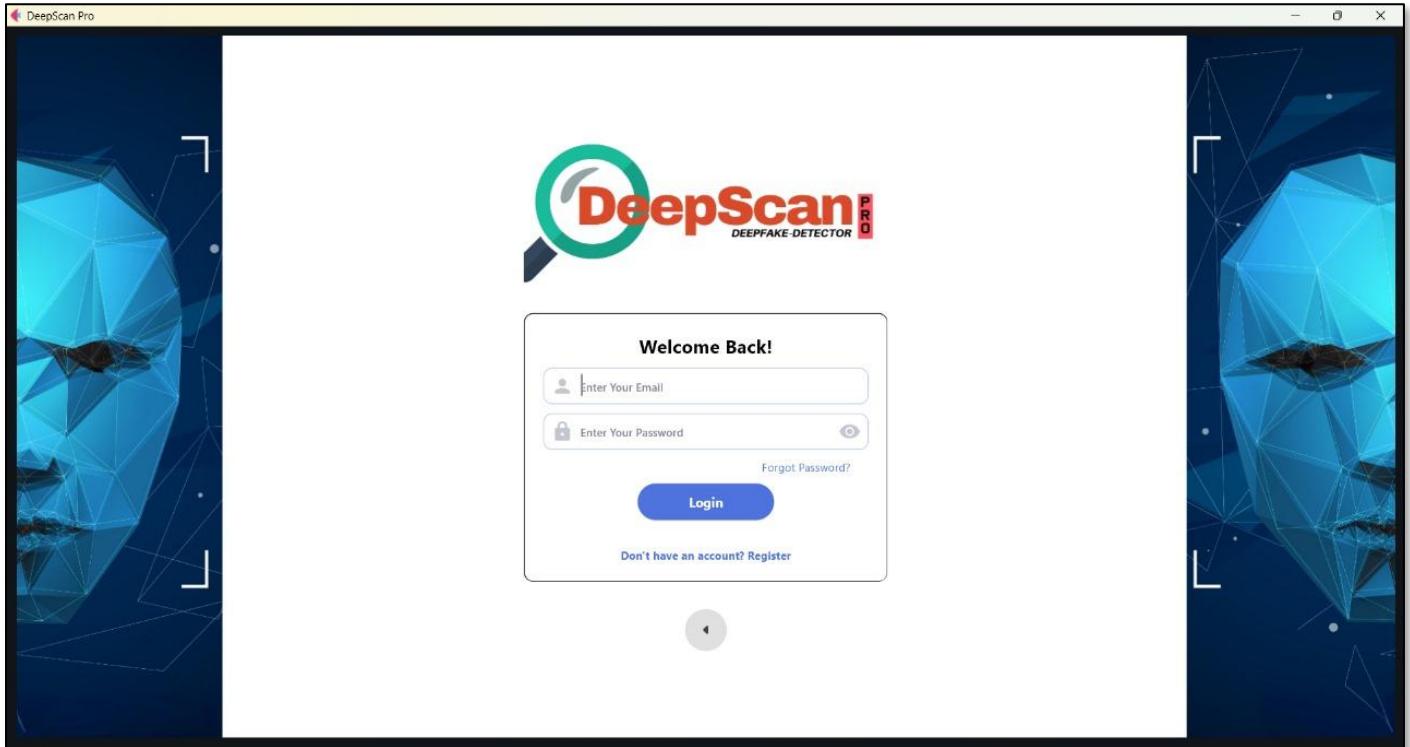


Fig c. Login Page

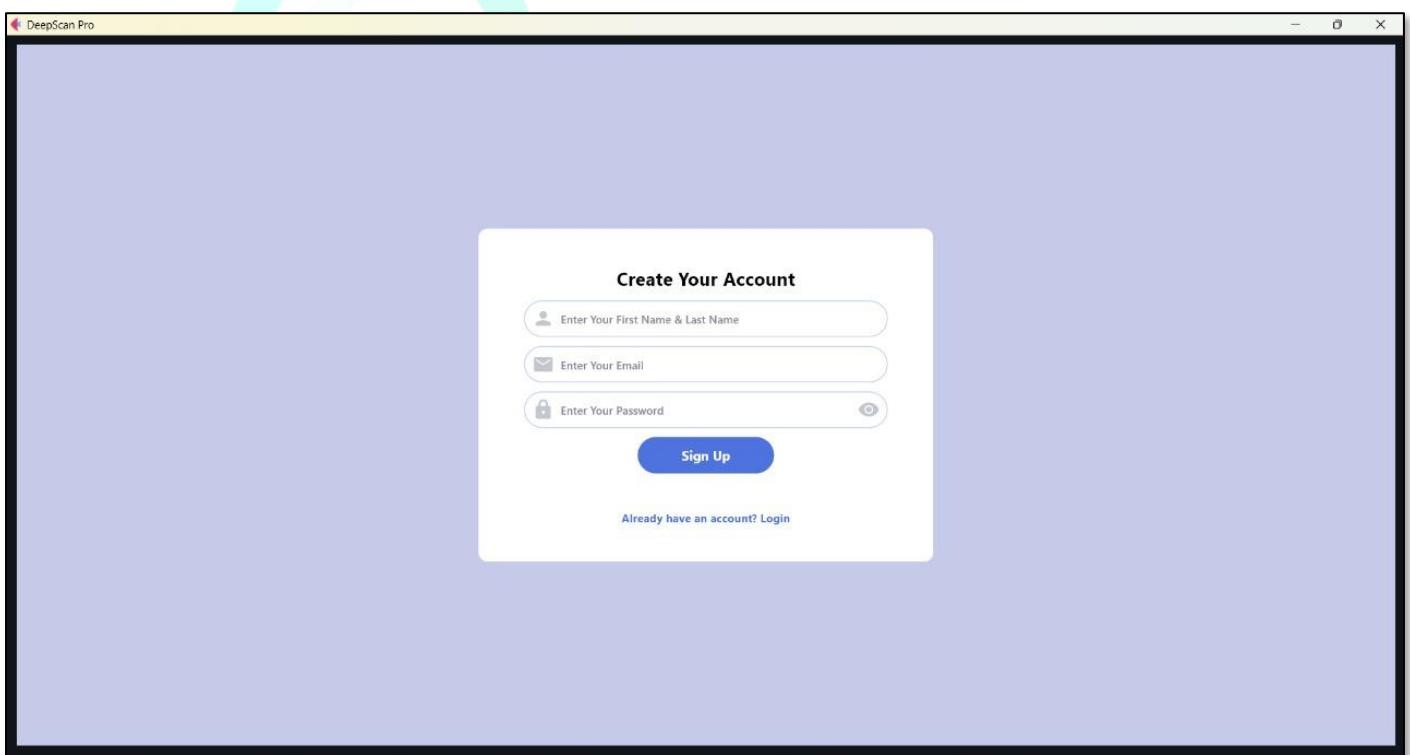
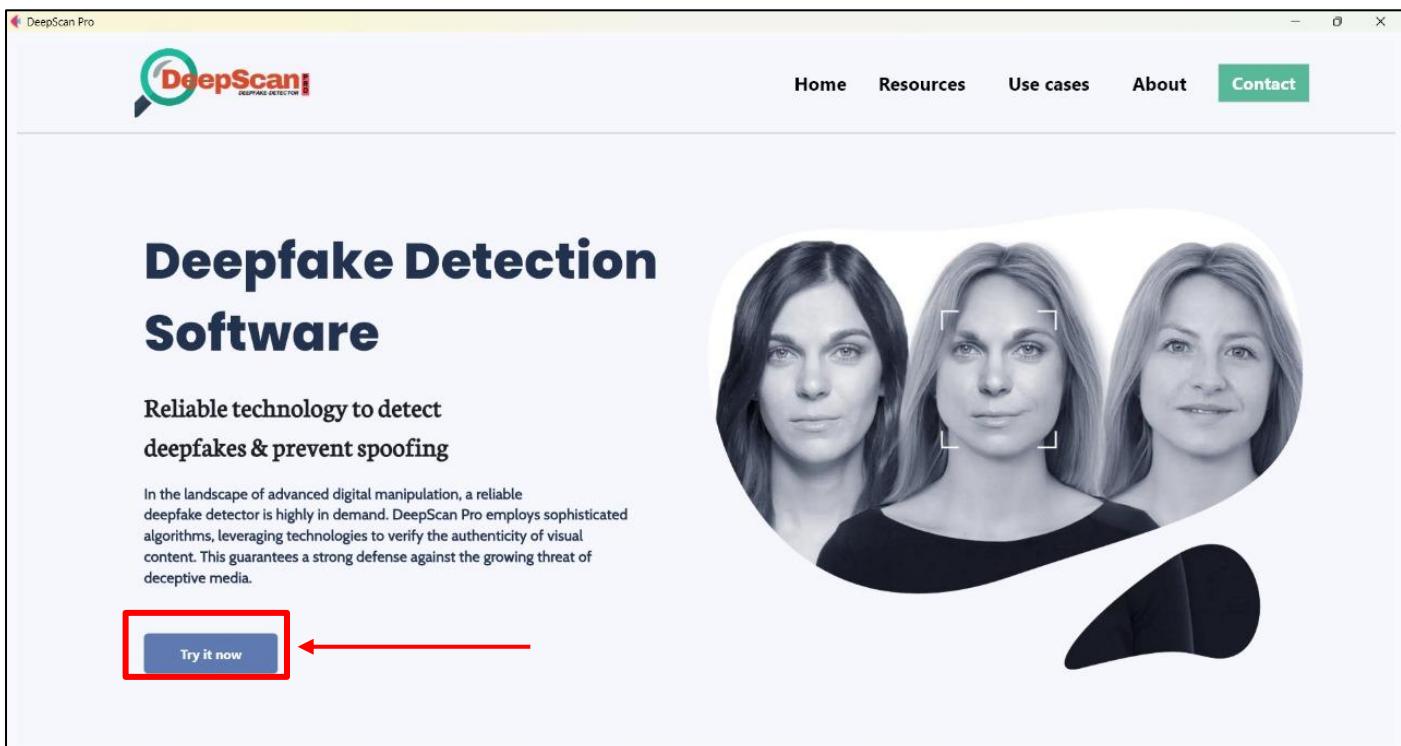


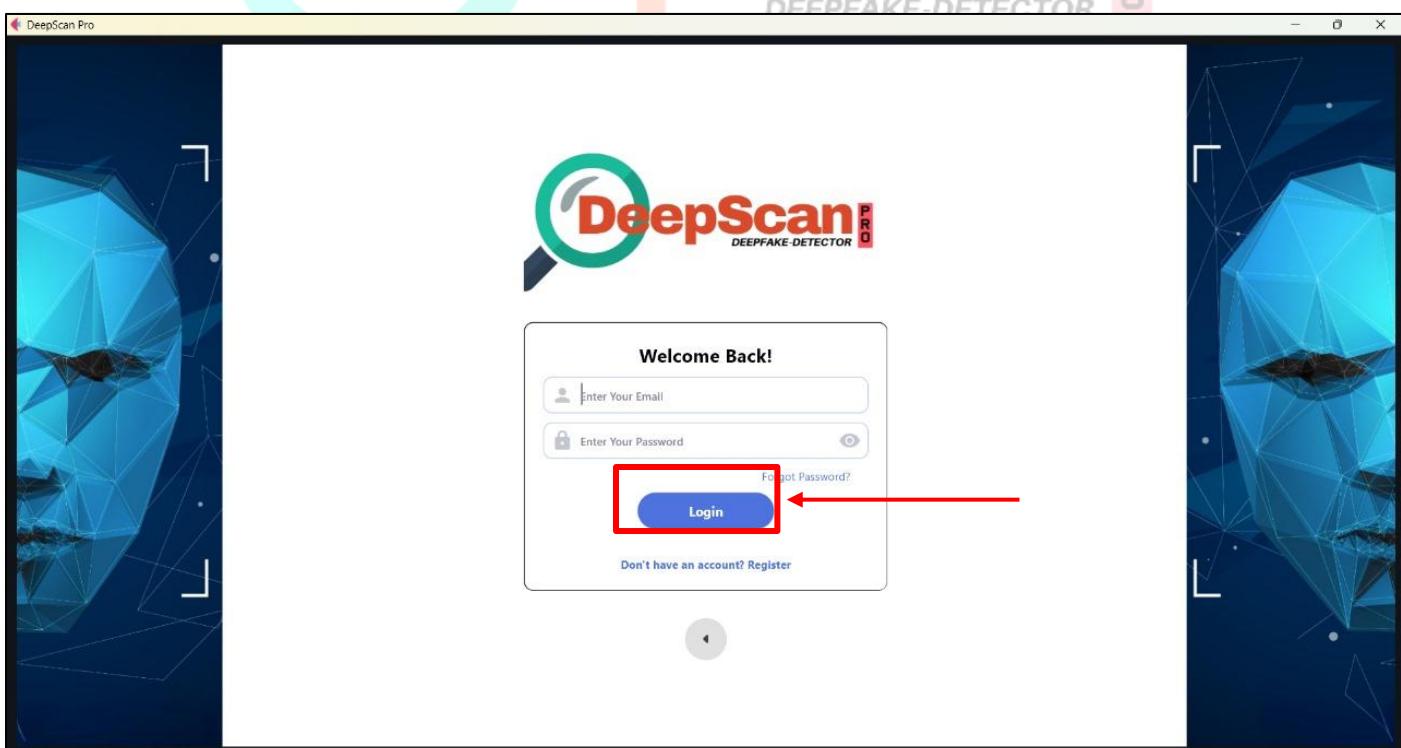
Fig d. Registration/SignUp Page

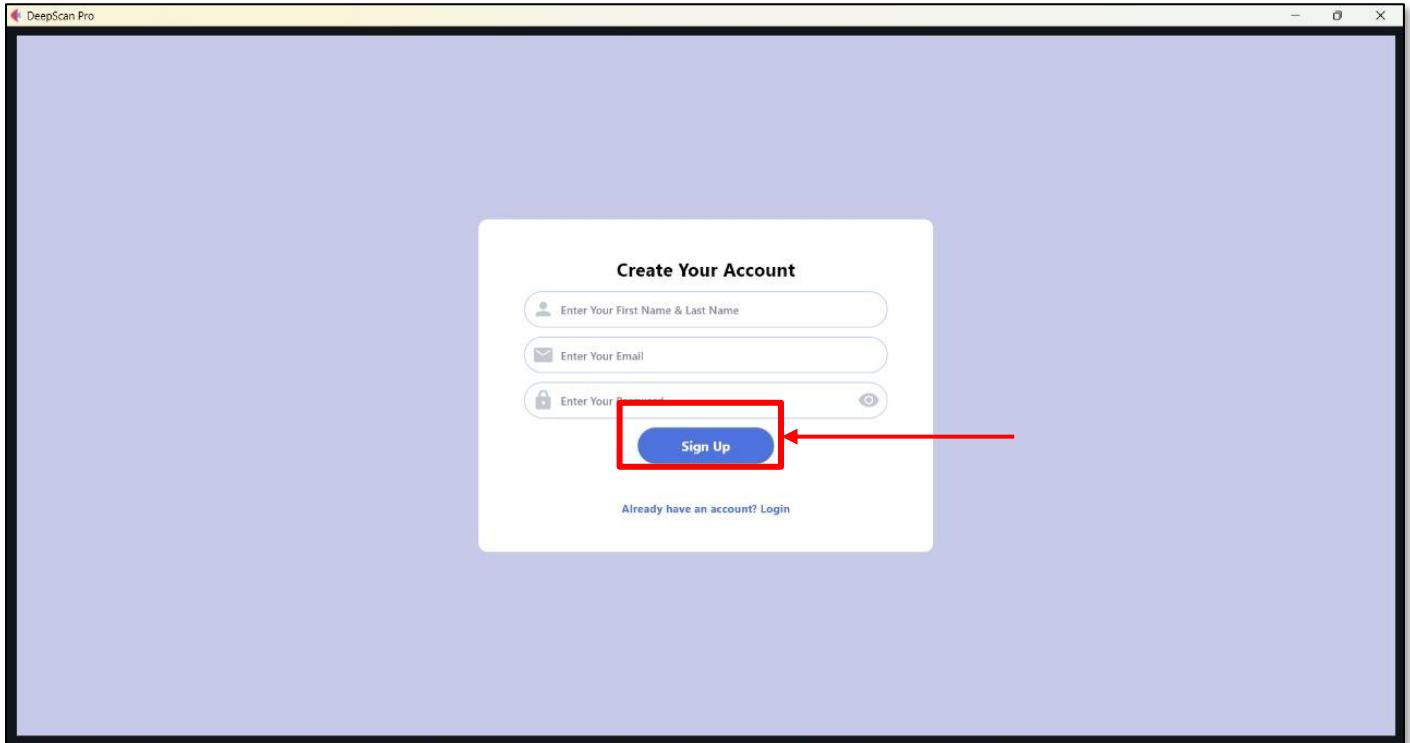
## 6. How to Use DeepScan Pro

Step 1: Launch the application.

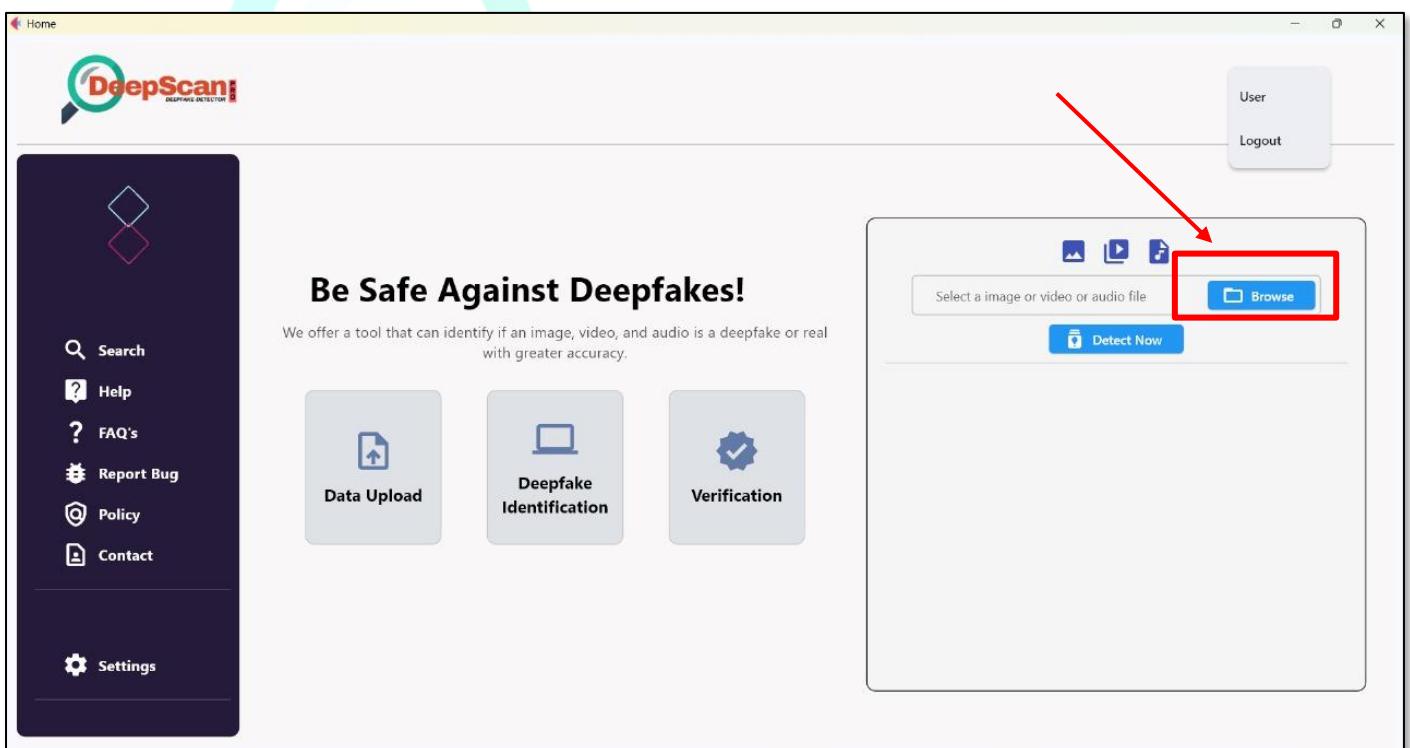


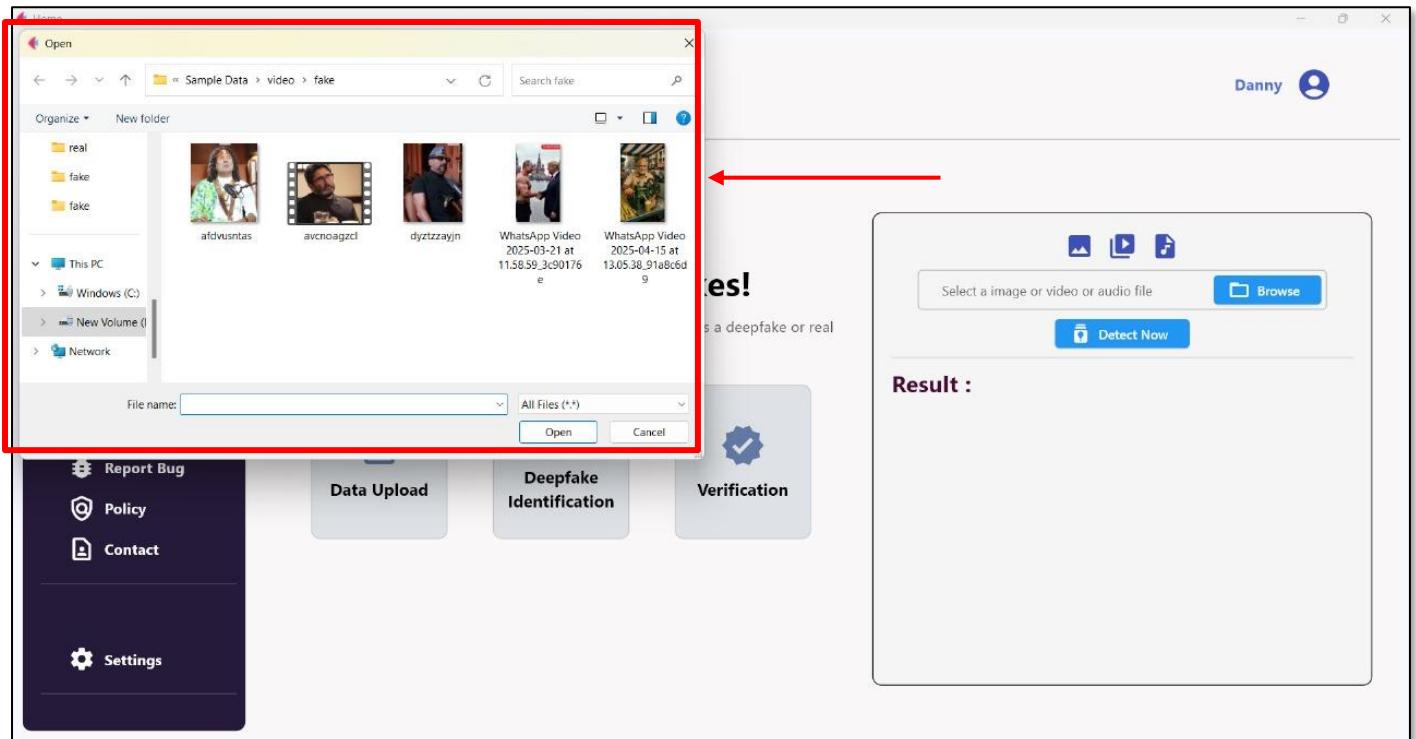
Step 2: Signup or login with valid credentials.



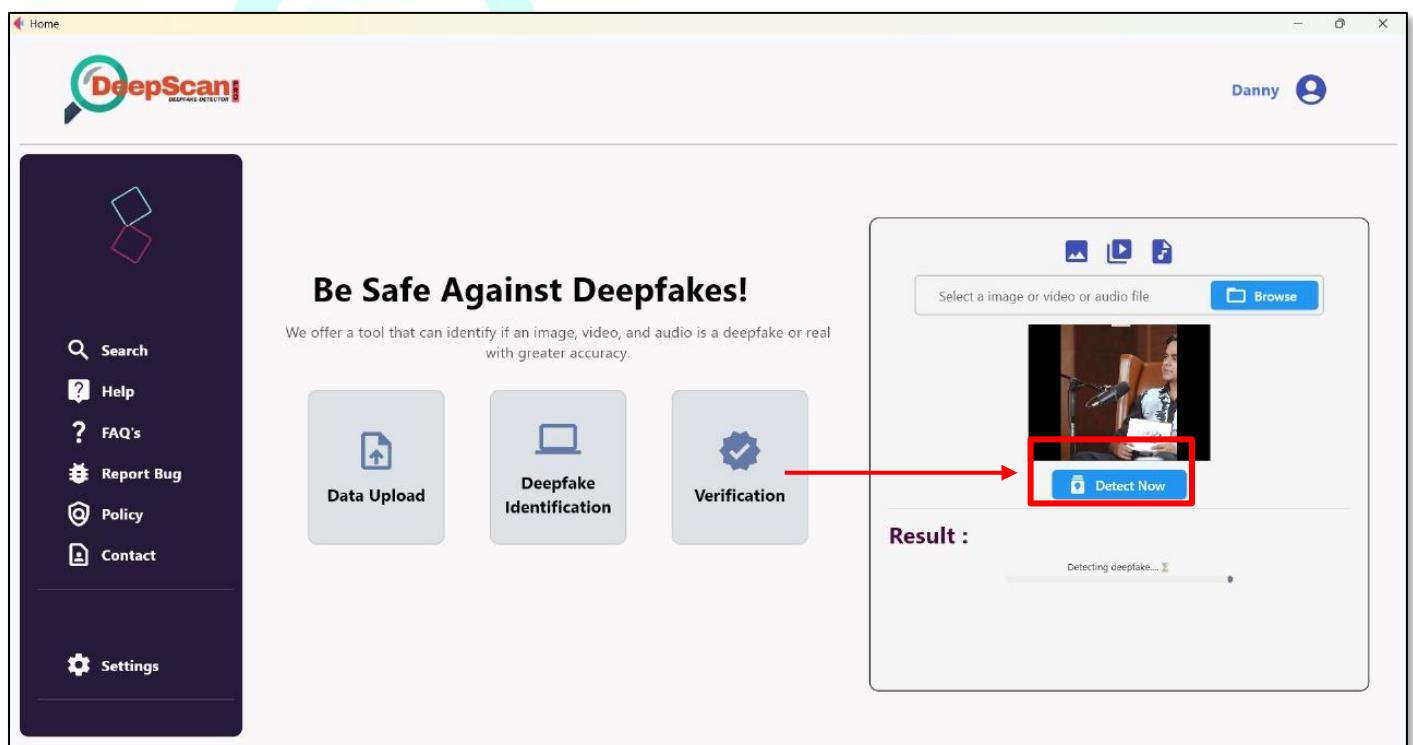


Step 3: On the home page, click "**Browse**" and select a media file.

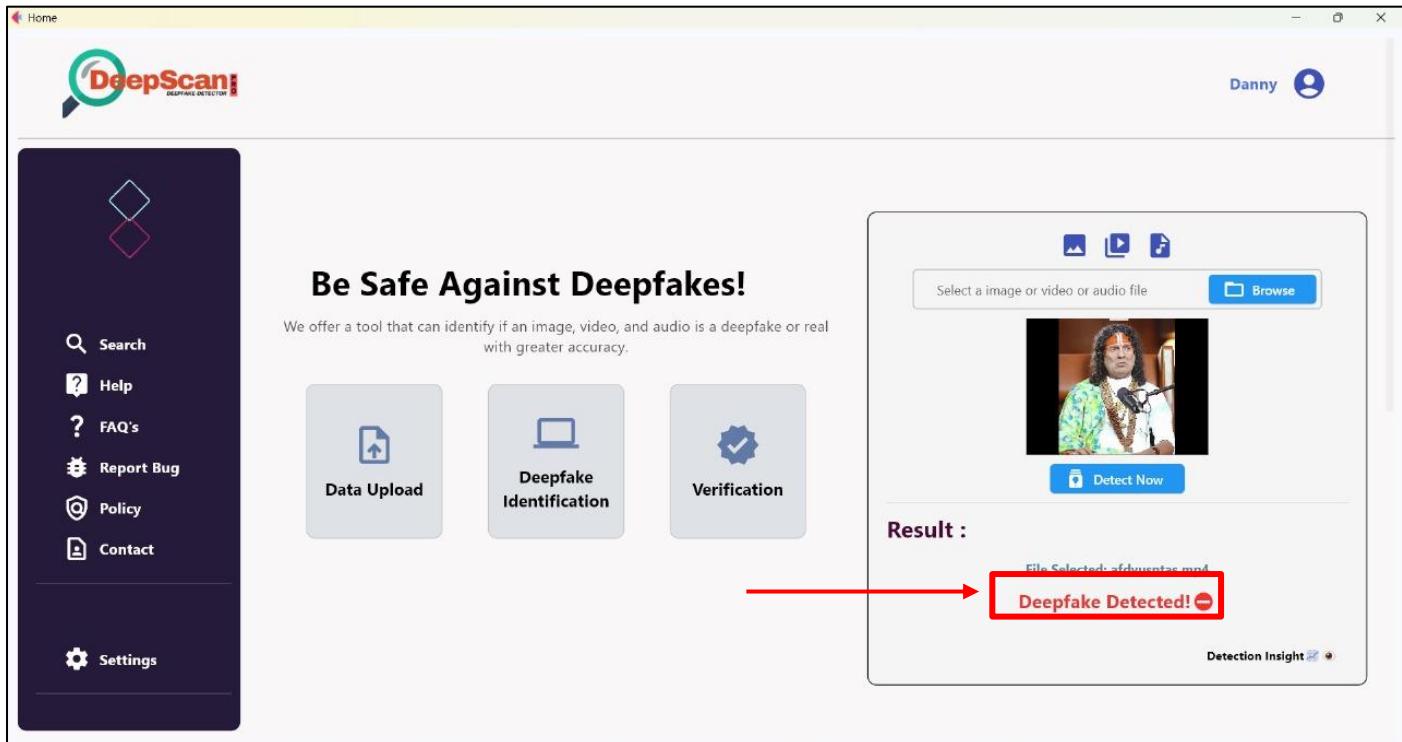




#### Step 4: Click the "Detect" button.



## Step 5: View results with label (deepfake detected/not) and Visualization Proof.



## Step 6: Logout after use.

## 7. Supported Media Formats

Media Type	Supported Formats
Image	.jpg, .jpeg, .png
Audio	.wav, .mp3
Video	.mp4, .avi

## 8. Troubleshooting Guide

Issue	Possible Solution
Firebase login fails	Check internet connection or Firebase config
Upload error	Use supported format and ensure file size < 50MB
Detection lag	Use a system with GPU support for faster analysis
Module/library not found	Run: pip install -r requirements.txt again
UI doesn't load	Ensure Flet is installed and browser is not blocked

## 9. Frequently Asked Questions (FAQs)

### Q1. What is DeepScan Pro used for?

**A:** DeepScan Pro is designed to detect manipulated media content (deepfakes) across images, videos, and audio using AI-based models.

### Q2. Does DeepScan Pro require internet access?

**A:** Yes, an internet connection is required for Firebase-based login and real-time updates. Detection models can run offline if set up locally.

### Q3. What types of media can DeepScan Pro analyze?

**A:** It supports .jpg, .png (images), .mp3, .wav (audio), and .mp4, .avi (videos).

### Q4. How accurate is DeepScan Pro?

**A:** Image detection achieves up to 90% accuracy, audio 76%, and video up to 87% using tested models like Swin Transformer, Wav2Vec2, and ResNeXt + LSTM.

### Q5. Is any user data stored?

**A:** No. Uploaded media is temporarily stored for processing and automatically deleted afterward unless explicitly configured otherwise.

## **Q6. Can I use DeepScan Pro on a mobile device?**

**A:** The UI is responsive and mobile-compatible, but detection performance is optimal on desktop systems.

## **Q7. What should I do if the detection fails?**

**A:** Check for supported file formats and ensure the file is not corrupted or overly large (>50MB). Also verify required libraries are installed.

## **Q8. Can DeepScan Pro detect all kinds of deepfakes?**

**A:** It focuses on facial image, voice, and facial video manipulations. Full-scene or text-based deepfakes are not currently supported.

## **Q9. Can I retrain the models with new datasets?**

**A:** Yes. The codebase supports modular model training using custom datasets in PyTorch or TensorFlow.

## **Q10. Is the tool open-source?**

**A:** It depends on your deployment. If published on GitHub or another platform, others can access and contribute if permitted.

## **10. Contact and Support**

For any inquiries, reach out to us at [deepscanpro.deepdetector@gmail.com](mailto:deepscanpro.deepdetector@gmail.com)

### **Publication:**

Published in IJCRT, Volume 13, Issue 5, May 2025, **Paper ID: 285218**

**GitHub:** [https://github.com/dhananjaya2003/DeepScan\\_Pro\\_Deepfake-Detector](https://github.com/dhananjaya2003/DeepScan_Pro_Deepfake-Detector)

Support Hours: 9 AM – 6 PM (IST)

## **11. Project Developers – *DeepScan Pro: A DeepFake Detector***

### **Project Developers:**

- Miss. Shreya Ramchandra Jadhav
- Mr. Dhananjay Ramrao Ambatwar
- Mr. Manasvi Harihar Mude
- Mr. Aryan Shahaji Tapase

**Project Guide:** Prof. Mr. S. T. Powar

**Institute:** D.Y. Patil College of Engineering & Technology, Kolhapur

**Department:** Computer Science and Engineering (Data Science)

**Academic Year:** 2024–2025

## 12. Privacy & Data Policy

- Uploaded media is processed temporarily
- No storage of user data unless explicitly allowed
- Firebase used for secure login

## 13. Version and Updates

- **Current Version:** v1.0 (May 2025)
- **Next updates:** any image detection, multilingual audio detection, mobile app release.

