

MACHINE LEARNING PROJECT

AI-POWERED FACE DETECTION & PLAYER IDENTIFICATION

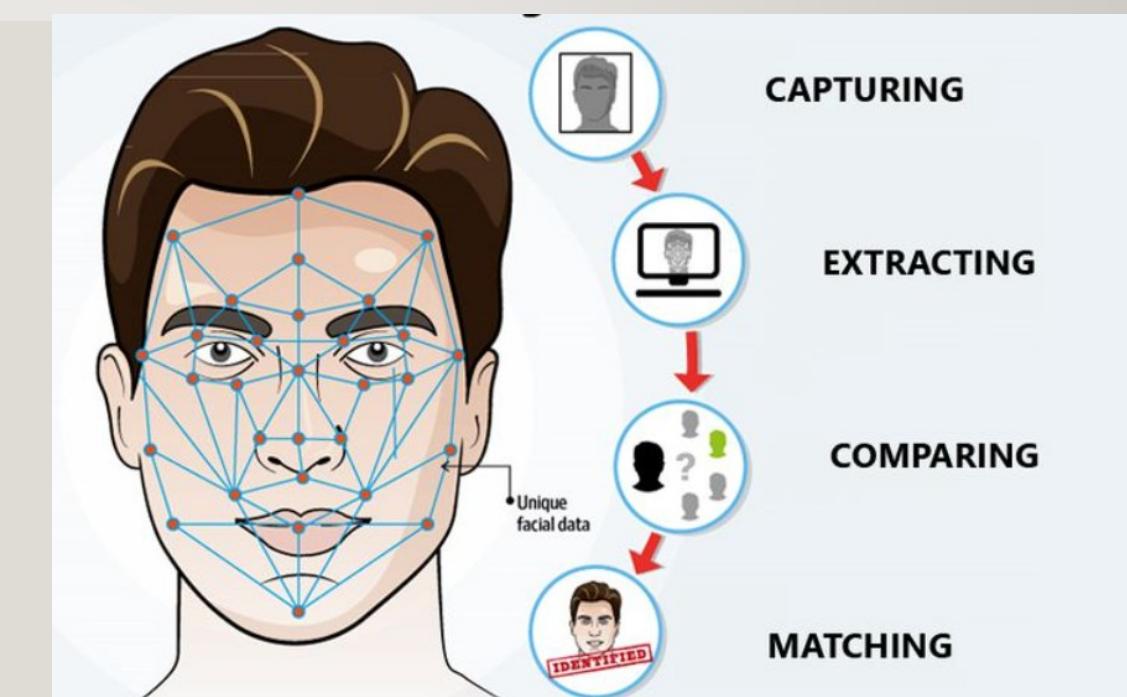
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INTRODUCTION

- This project automates the process of recognizing professional cricket players from images.
- Traditional identification is manual and time-consuming.
- **Objective:**
 - Detect faces of cricketers in images.
 - Retrieve player details such as Name, National Team, Role, Age, IPL Team, and Notable Records.



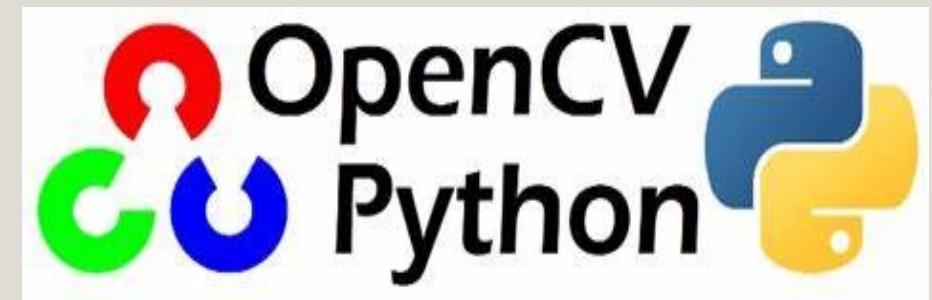
MOTIVATION

- Cricket is followed worldwide; identifying players quickly is valuable for:
 - Sports analytics and statistics
 - Broadcasting and commentary
 - Fan engagement apps
- Automation saves time, reduces errors, and enables real-time recognition.



TOOLS & TECHNOLOGIES USED

- **Programming Language:** Python
- **Libraries:**
 - Streamlit → Web app interface
 - OpenCV → Face detection and image processing
 - PIL & NumPy → Image handling and conversion
 - Regex → Extracting player info from text
- **AI API:** Google Gemini (Gemini-2.5-pro) for player recognition

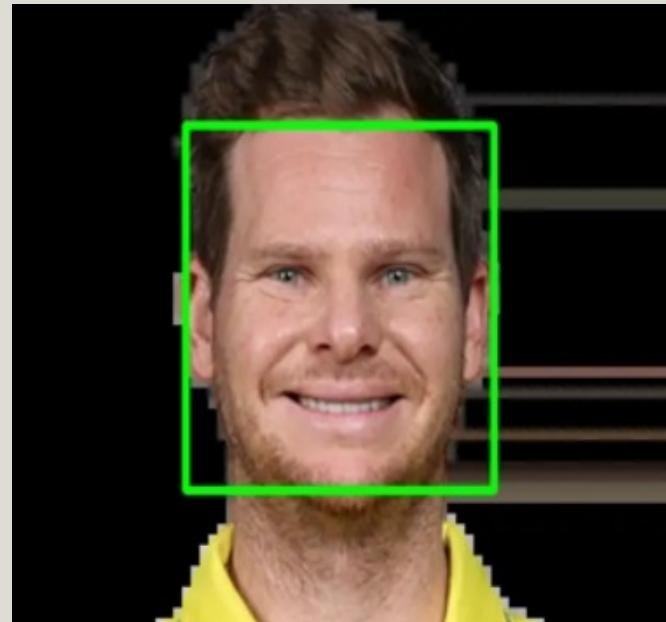


SYSTEM ARCHITECTURE

- User uploads a cricket player image via Streamlit app.
- OpenCV detects faces using Haar Cascade Classifier.
- The largest or most famous face is selected.
- Google Gemini API identifies the player and provides details.
- Output: Detected face with player information displayed side-by-side

FACE DETECTION

- **How it works:**
- Convert uploaded image to OpenCV format.
- Convert image to grayscale for processing.
- Use Haar Cascade Classifier to detect faces.
- Select the largest face if multiple are detected.



AI-BASED PLAYER RECOGNITION

- **How Google Gemini is used:**

- AI is prompted to identify professional cricketers in the image.
- Returns structured information:

- Full Name
- National Team
- Role (Batsman/Bowler/Allrounder)
- Age
- IPL Team
- Notable Records

- **Handling edge cases:**

- Multiple players → choose the most famous.
- Unknown player → response: “unknown”.

CHALLENGES & SOLUTIONS

Challenge

Multiple faces in one image

Unknown or new players

Image quality issues

API response format inconsistency

Solution

Select largest or most famous face

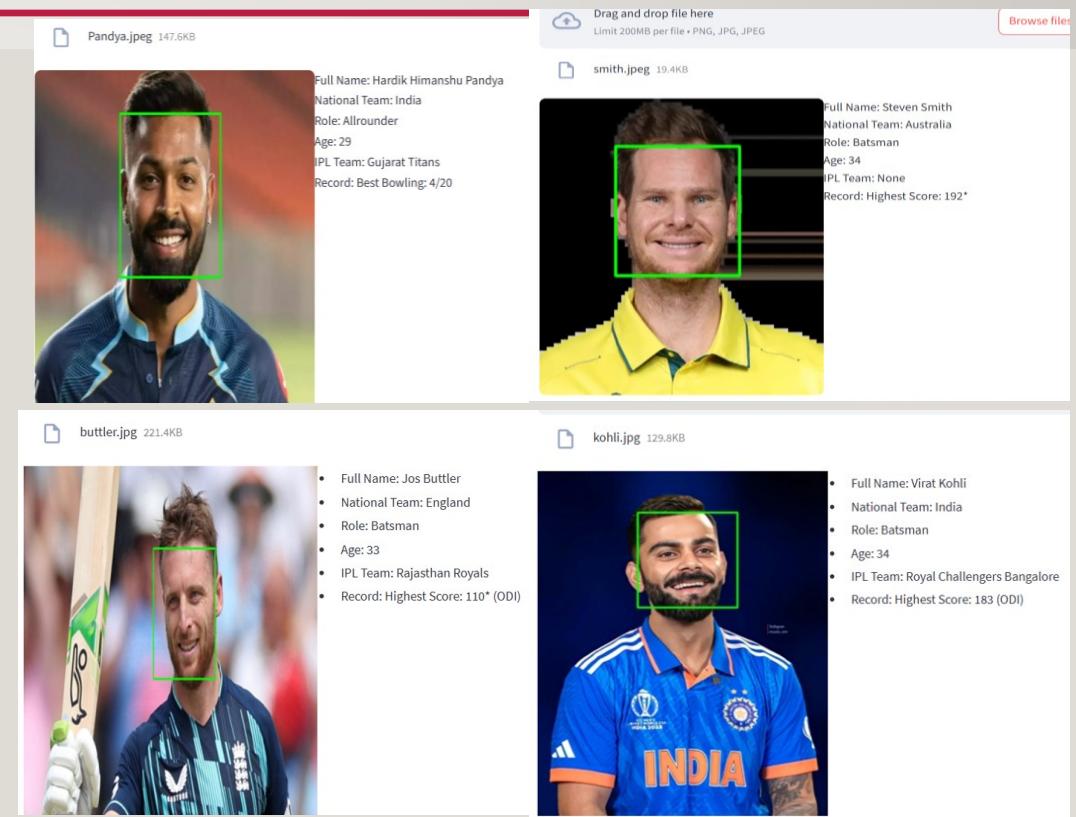
Display “unknown”

Suggest higher resolution images

Regex used to extract player info

RESULTS

- Successfully detects faces in uploaded images.
- Correctly identifies professional cricketers and displays detailed information.
- Limitations:
 - May not recognize new players not in AI database.
 - Works best with clear, frontal images.



FUTURE ENHANCEMENTS

- Support for live video feed or webcam input
- Integration with cricket stats database for real-time updates
- Mobile app deployment for wider accessibility
- Recognize multiple players in a single frame
- **Visual Suggestion:** Icons for Mobile, Cloud, Video streaming

ANY QUESTIONS.....



THANKS.....

