Fantsy 11 WEBAPP Using MERN Stack

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***Abstract* – Fantasy 11 is a fantasy sports web app that enable users to create and manage visual team or real-life player, competing in contest and leagues to win case prizes. With a user-friendly interface, Fantasy 11 allows user to select players, track their performance, and analyze statistics to make informed decisions. The platform offers a range of features, including multiple contest formats, live scoring, and secure payment gateways, providing an immersive and engage experience for sports enthusiasts. Allowing users to access the platform on the go. Furthermore the platform algorithm driven scoring system ensures fair and transparent scoping, while its social features enable users to interact with other players, share tips, and join discussion. Overall, fantasy11 provides an immersive and engaging experience for sports enthusiasts, combining the thrill of competition with the excitement of fantasy sports.**

***Keywords* – Fantasy Sports, Leagues, Online Gaming, Live Scoring, Contest, Virtual Team**

I. INTODUCTION

Fantasy 11 is an innovative and immersive fantasy sports web app that has revolutionized the way sports enthusiasts engage with their favorite games and players. In today's digital age, the thrill of watching live sports has been elevate to new height with the advent of fantasy sports platform. Fantasy11 is one such platform that allows users to create and manage their own virtual team or real-life players, competing against other users in contests and leagues to win exciting cash prizes. With its user-friendly interface, robust features, and seamless navigation, Fantasy11 has become the go to destination for fantasy sports enthusiasts, providing an unparalleled gaming experience that combines skill, strategy, and luck.

The concept of fantasy 11 apart has been around for decades, but if has gained immense popularity in recent years, thanks to be proliferation of smartphones, high speed internet, and social media. Fantasy 11 has tapped into this growing trend, offering a platform that caters to the divers needs and preferences of sports fans. Whether you are a seasoned fantasy sports player or a newcomer looking to dip your toes into the world of fantasy sports, Fantasy11 has something for everyone. The platform intuitive design makes it easy for users to create and manage their teams, track their performance, and analyze statistics to make informed decisions. Additionally, Fantasy11 robust security features ensure that all transactions are safe and secure, providing users with a hassle-free gaming experience.

II. LITERATURE REVIEW

The concept of fantasy sports has been extensively studies in the literature with researches exploring its evolution, growth, and impact on the sports industry. According to a study by Dwyer and Kim (2011), fantasy sports have become a significant component of the sports industry, with millions of participant worldwide. The study highlight the importance of understanding the motivations and behaviors of fantasy sports participant, which is crucial for developing effective marketing strategies and improving the overall user experience. In the context of fantasy11, understanding the motivations and behavior of users is essential for creating an engaging and immersive experience that meets their needs and preferences.

Several studies have investigated the factors that influence user engagement and participation in fantsy sports. For example, a study by Spinda and Haridakis (2009) found that fantasy sports participants are motivated by a desire for social interaction, competition and entertainment. the study highlight the important

III. PROPOSED SYSTEM

All students enrolled in the course are required to register by providing the necessary details, after which their photographs will be taken and stored in a database. During each session, faces will be detected from the live video feed of the classroom. The detected faces will be matched against the images stored in the database. If a match is found, attendance

will be marked for the respective student. At the end of each session, a list of absentees will be forwarded to the respective instructor in charge of the session. The system architecture of the proposed setup is outlined below.

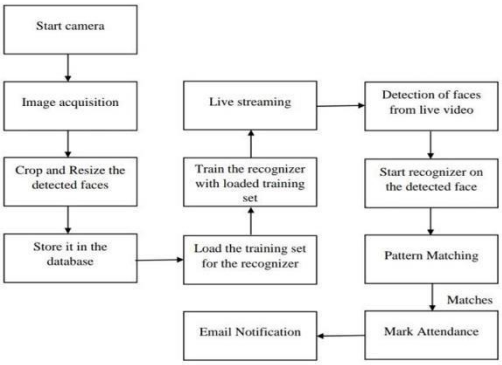


Fig-I System Architecture

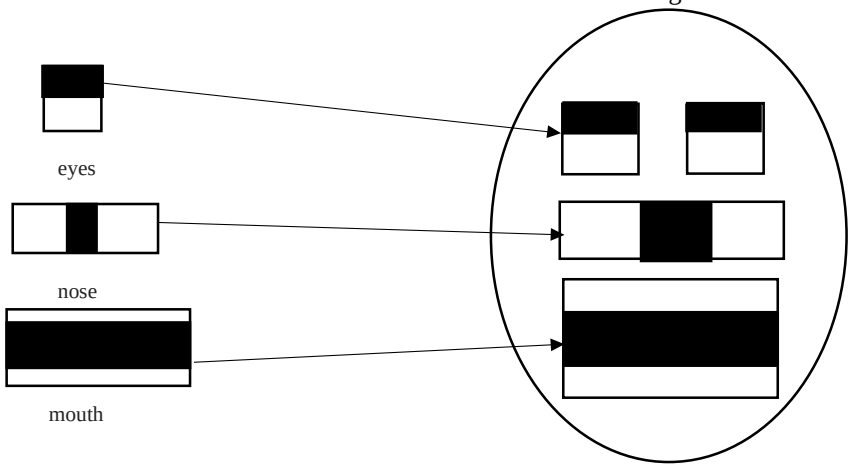
This process can typically be broken down into distinct stages:

1. Dataset Creation

Images of students are captured using a webcam. Multiple images of each individual student will be obtained, featuring various expressions and angles. These images undergo pre-processing, where they are cropped to focus on the Region of Interest (ROI), making them suited for recognition tasks. The next step involves resizing the cropped images to specific pixel dimensions. Subsequently, these images are converted from RGB to grayscale format. Finally, the processed images are saved in a folder, labeled with the corresponding names of each student.

2. Face detection

Face detection is carried out using the Haar-Cascade Classifier through OpenCV. The Haar Cascade algorithm must first be trained to recognize human faces before it can be applied for detection; this stage is known as feature extraction. The training data for this purpose is provided in an XML file known as haarcascade_frontalface_default. This ensures that a rectangle is drawn around faces within an image. Three key parameters are considered: scaleFactor, minNeighbors, and minSize. The scale Factor determines how much the image will be reduced at each scale, while minNeighbors specifies how many neighboring rectangles must be present for a candidate rectangle to be accepted. Higher values typically yield fewer detected faces but of higher quality. The minSize indicates the smallest size for detected objects, which is set to (30, 30) by default. In this system, the parameters used are scale Factor of 1.3 and min Neighbors set to 5. features



The theoretical face model

Fir -II Haar Features

3. Preprocessing Techniques :

3.1. Noise Reduction : Gaussian filtering was utilized to smooth the images and diminish high-frequency noise. This method employs a Gaussian function to average the intensities of pixels, retaining crucial details while reducing distortions within the image.

3.2. Face Alignment

Methods such as MTCNN (Multi-Task Cascaded Convolutional Networks) and dlib were implemented to position faces into a standard orientation. These tools identify facial landmarks, including the eyes, nose, and mouth, and adjust the angle of the face to maintain a consistent frontal view.

3.3. Contrast Enhancement

Histogram equalization was applied to reallocate pixel intensity values, improving the contrast of the images. This modification makes facial features more prominent, facilitating effective recognition.

3.4. Lighting Correction

Two techniques were used to tackle uneven lighting:

- Adaptive Histogram Equalization (AHE): This enhances local contrast by modifying brightness in smaller areas of the image.
- Gamma Correction: This technique employs a non-linear transformation to pixel intensities, rectifying brightness variances caused by shadows or glare.

4. Face Recognition

The face recognition phase can be divided into three steps: preparing the training data, training the face recognizer, and making predictions. The training data comprises images in the dataset, each assigned a numerical label corresponding to the respective student. These images are then utilized for face recognition. The face recognizer employed in this setup uses Local Binary Patterns (LBP). Initially, the LBP for the entire face is computed, converting these patterns into decimal values, from which histograms are created for each value. Ultimately, a histogram is generated for every image in the training dataset. During the recognition process, a histogram of the face that needs to be identified is created and compared against the pre-computed histograms. The best match is then returned, corresponding to the name of the respective student.

5. Attendance Update

Following the face recognition process, the identified faces will be marked as present in the spreadsheet, while the others will be categorized as absent. A list of absentees will be forwarded to the respective faculty members. The faculty's attendance records will be updated with the monthly attendance sheets at the end of each month

IV. ROLE OF CONTEMPORARY DEEP LEARNING MODELS IN THE PROJECT

Face Recognition: FaceNet, DeepFace, and VGGFace are capable of producing highly effective embeddings crucial for accurate facial recognition. These embeddings form a strong representation of facial characteristics, enabling the system to identify and validate individuals even under diverse circumstances.

Real-Time Identification: These deep learning models deliver quick and dependable face recognition, making them well-suited for a real-time attendance tracking system. The embeddings produced by these models can be efficiently compared using distance metrics, such as Euclidean distance.

Accuracy in Varied Conditions: Each of these models demonstrates resilience against elements like lighting changes, facial expressions, and variations in pose, ensuring the system operates effectively in reallife situations where faces may not always be perfectly aligned or well-lit.

V. RESULTS AND DISCUSSIONS

The users can interact with the system using a GUI. Here users will be mainly provided with three different options such as, student registration, faculty registration, and mark attendance. The students are supposed to enter all the required details in the student registration form. After clicking on register button, the web cam starts automatically and window as shown in Fig.3. pops up and starts detecting the faces in the frame. Then it automatically starts clicking photos until 60 samples are collected or CRTL+Q is pressed. These images then will be pre-processed and stored in training images folder. The faculties are supposed to register with the respective course codes along with their email-id in the faculty registration form provided. This is important because the list of absentees will be ultimately mailed to the respective faculties.

VI. CONCLUSION

The Attendance Monitoring System that utilizes Face Recognition is crafted to provide an improved, highly accurate solution for automating class attendance. By employing sophisticated face recognition methods, this system effectively identifies and detects faces, even in intricate backgrounds, thereby assuring consistent performance across various practical situations. The incorporation of deep learning models such as FaceNet, DeepFace, and VGGFace contributes to the system's accuracy and resilience, enabling it to recognize faces reliably despite variations in lighting, facial expressions, and angles.

The operation of the system involves capturing a student's image through a webcam, processing it to identify distinct facial characteristics, and then matching these features with stored data. When a face is successfully recognized, the system automatically

registers the student's attendance and updates the records in real-time. This automation not only streamlines the process, saving time, but also minimizes human errors that can occur with traditional manual attendance methods.

In summary, the system's fine-tuning guarantees high levels of accuracy, even in demanding environments with busy backgrounds, making it ideal for extensive educational institutions where dependability and efficiency are essential.

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