

# **AptiView - The Smart Hire**

**Ms. Arpita Chalwade, Ms. Gayatri Mane, Ms. Sakshi Khanapure, Prof. S. D. Shelar**

Students, Department of Artificial Intelligence & Data Science

Assistant Professor, Department of Artificial Intelligence & Data Science

Shree Siddheshwar Women's College of Engineering, Solapur, Maharashtra, India

arpitachalwade12@gmail.com, gayatrim4575@gmail.com, sakshi.khanapure14@gmail.com

**Abstract:** *AptiView: The SmartHire is an innovative and intelligent web-based platform designed to transform the traditional recruitment and placement preparation process into a smarter, faster, and more efficient system. The project aims to bridge the communication and performance gap between job seekers and recruiters by providing a centralized digital environment for assessment, learning, and candidate evaluation. In today's competitive employment market, students and job aspirants often face challenges in preparing for aptitude examinations, technical interviews, and company-specific recruitment processes. Similarly, recruiters struggle with manual screening methods, time-consuming evaluations, and inefficient hiring procedures. AptiView addresses these challenges through an integrated and technology-driven solution. The primary objective of the system is to provide a smart hiring and preparation platform that benefits both candidates and organizations.*

*The platform enables users to prepare for placement examinations while simultaneously offering recruiters a reliable mechanism for candidate screening and evaluation. The system combines aptitude practice, mock examinations, performance tracking, and recruitment management within a single digital framework. This integration improves efficiency and reduces the dependency on traditional recruitment practices. The AptiView platform is designed with a user-friendly and interactive interface to ensure easy navigation and accessibility. The dashboard serves as a centralized control panel that helps users manage their learning and assessment journey effectively..*

**Keywords** Smart Hiring, Recruitment System, Placement Preparation, Aptitude Testing, Mock Examination, Candidate Evaluation, Web-Based Platform, Online Assessment, Recruitment Management, Performance Tracking, Placement Training, User Dashboard, Digital Recruitment, Skill Assessment, Candidate Screening, Learning Platform, Employment Preparation, Interview Preparation

## **I. INTRODUCTION**

“AptiView – The SmartHire” is an AI-based smart examination and monitoring system developed to improve the security, fairness, and efficiency of online examinations. The project focuses on monitoring student behaviour during exams using camera-based surveillance and automated alert mechanisms. Unlike traditional online examination systems, AptiView ensures that students follow examination rules and prevents malpractice through real-time monitoring and intelligent detection techniques. In today's digital learning environment, conducting secure online examinations has become a major challenge. Manual monitoring of students during online exams is difficult, time-consuming, and often ineffective. To solve this problem, AptiView introduces an automated proctoring system that uses a webcam to continuously monitor student activities during the examination.

If any suspicious or misbehaviour activity is detected, such as looking away repeatedly, multiple face detection, or unauthorized movements, the system immediately generates an alert message. In severe cases, the student is automatically logged out of the examination to maintain exam integrity. The system is designed as a web-based application developed using Python Flask for backend operations, MySQL for database management, and HTML, CSS, and JavaScript for frontend development. It contains two main modules: the Admin Panel and the Student Panel. The



admin can manage students, questions, and monitor examination reports, while students can register, log in, and attend examinations securely through the platform.

## II. LITERATURE REVIEW

Several online examination and remote proctoring systems have been developed to improve digital assessment methods. Traditional online examination systems mainly focus on conducting tests, storing results, and evaluating answers through objective-type questions. However, these systems generally lack intelligent monitoring features to detect cheating or suspicious behavior during examinations. Many institutions currently use video conferencing platforms or manual invigilation methods for online monitoring. These methods require continuous human supervision, which becomes difficult and inefficient when handling a large number of students. Manual monitoring also increases the possibility of human error and inconsistent observation during examinations. Some existing proctoring systems use basic webcam monitoring and screen recording techniques to observe students during online exams. Certain advanced systems also implement face detection, browser activity tracking, and alert generation to identify suspicious activities. However, many of these solutions are expensive, complex, or require high-end hardware and software resources. Research in the field of AI-based monitoring systems has shown that automated supervision can significantly improve exam security and reduce malpractice. Technologies such as computer vision, face detection, motion tracking, and behavior analysis are increasingly being used to create smarter online examination environments.

## III. MOTIVATION

Traditional online examination systems mainly focus on conducting tests but lack effective monitoring mechanisms to prevent cheating and suspicious activities. Manual invigilation through online platforms is difficult, especially when handling a large number of students. This often leads to unfair practices such as impersonation, looking away from the screen, using unauthorized materials, or receiving external help during examinations. To overcome these problems, the project was motivated by the idea of creating an intelligent and automated monitoring system that can observe student behaviour in real time using a webcam.

The system provides instant warning alerts whenever suspicious behaviour is detected and automatically logs out the student if misconduct continues. This helps in maintaining examination integrity and reducing dependence on continuous human supervision. Another motivation for this project is to use modern technology to make online examinations more secure, transparent, and efficient. The project also aims to support institutions in conducting fair digital assessments while saving time, reducing manual effort, and improving trust in online examination systems.

## IV. SCOPE

The scope of “AptiView – The SmartHire” is broad in the field of online education, digital examinations, and recruitment assessments. The system is designed to provide a secure and transparent online examination environment through automated monitoring and alert mechanisms. The project can be used in schools, colleges, universities, coaching institutes, training centers, and organizations that conduct online tests or placement examinations. It supports student registration, secure login, online exam management, webcam-based monitoring, suspicious activity detection, automatic alert generation, and secure result storage.

The system helps administrators manage students, questions, and exam reports efficiently while reducing the workload of manual invigilation. Since the platform is web-based, it can be accessed from any device with a webcam, internet connection, and browser, making it flexible and user friendly.

In the future, the scope of the project can be extended by integrating advanced technologies such as:

- AI-based face recognition
- Eye movement tracking
- Emotion and behavior analysis
- Mobile application support



- Multi-language support
- Cloud-based data storage
- Advanced analytics and reporting systems

## V. REQUIREMENTS

### **HARDWARE REQUIREMENT FOR “APTIVIEW – THE SMARTHIRE” ARE AS FOLLOWS:**

- Processor: Intel i3 or above
- RAM: Minimum 4 GB RAM (8 GB recommended)
- Storage: Minimum 20 GB free disk space
- Device: Laptop or Desktop Computer
- Webcam/Camera: In-built or external camera for student monitoring
- Internet Connection: Stable broadband or Wi-Fi connection
- Display: Monitor with minimum 1366 × 768 screen resolution

These hardware components are required for smooth system performance, real-time camera monitoring, and secure online examination management.

### **SOFTWARE REQUIREMENT FOR “APTIVIEW – THE SMARTHIRE” ARE AS FOLLOWS:**

- Operating System: Windows 10 / Windows 11
- Frontend Technologies: HTML, CSS, JavaScript
- Backend Technologies: Python Flask, PHP
- Database: MySQL
- Development Tools: VS Code, XAMPP
- Web Browser: Google Chrome / Microsoft Edge
- Server: Localhost Server using XAMPP
- Programming Languages: Python, PHP, JavaScript

These software components are required for developing, running, and managing the online examination monitoring system effectively.

## VI. MODULE

**Admin Module:** - The Admin module is responsible for managing the entire online examination system. The admin can log in securely and control all examination activities. This module allows the admin to manage students, add questions, and monitor examination records and results.

**Question Module:** - The Question module is used to store and manage examination questions. It contains the question text, multiple options, and the correct answer. The admin can add and display questions through this module.

**Student Module:** - The Student module handles all student-related activities in the system. Students can register, log in, attend exams, and view their results using this module.

**Result Module:** - The Result module stores and displays student examination performance. It maintains student scores and exam status after completion of the examination.

## VII. DATA PROCESSING

The Online Exam System performs data processing for user management, question handling, examination evaluation, webcam monitoring, and report generation. Data processing is carried out using Python functions, Flask routes, and MySQL database operations. The system processes both user-generated data and administrator-uploaded data efficiently.

1. **User Data Processing:** - During registration, user information such as name, email, mobile number, password, course, and webcam image is collected through HTML forms. The data is validated and processed before storing it into the



- database. Duplicate email verification is also performed to avoid multiple registrations using the same email address.
2. Image Data Processing: - The webcam image captured during registration and live monitoring is converted into Base64 encoded format. The encoded image is decoded on the server side and stored in the uploads folder. This process helps in maintaining student identity verification during online examinations.
  3. Authentication Data Processing: - During login, the system processes user credentials entered through the login form. The entered email and password are matched with database records for authentication. Based on the account status such as approved, pending, or blocked, the system grants or denies access to the examination portal.
  4. Question File Processing: - The administrator uploads question files in CSV or Excel format. The uploaded file is processed using the Pandas library. The system extracts question data such as question statement, options, and correct answer from each row of the file. Invalid or empty rows are removed during preprocessing before storing the questions in the database.
  5. Examination Data Processing: - During the examination, subject-wise questions are fetched dynamically from the database. Student-selected answers are processed and evaluated automatically. The system calculates obtained marks, total marks, and examination status based on the submitted answers.
  6. Live Monitoring Data Processing: - The live monitoring module continuously processes webcam frames sent from the client browser. Each frame is temporarily stored in memory and displayed in the administrator monitoring panel. The administrator can send alerts or block users based on suspicious activities detected during the examination.

#### VIII. ACKNOWLEDGMENT

We would like to extend my acknowledgement to all those who have been very helpful to complete my Internship Project. We would like to express my deep sense of gratitude to my guide Prof. S. D. Shelar for inspiring guidance due to which my difficulties and questions were shaped into the development of the Internship Project. His words of inspiration always encouraged us to work hard and finish it on time. Bearing in mind, We take this opportunity to express our deepest gratitude and special thanks to Prof. S. D. Shelar who inspite of being extraordinarily busy with his duties, took time out to hear, guide and allowing us to carry out our project at their esteemed organization and extending during the project. We also take this opportunity to express a deep sense of gratitude towards Prof. A. A. Phatak Head of CSE(Artificial Intelligence and Data Science) Department, for valuable guidance and support. We are also thankful to Dr. T. A. Chavan, Principal, Shree Siddheshwar Women's College of Engineering, Solapur for making requisite facilities available to me.

#### REFERENCES

- [1]. [https://www.google.com/search?q=aptitude+questions+for+placement&dq=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs\\_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAM](https://www.google.com/search?q=aptitude+questions+for+placement&dq=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAM)  
<https://cpt.hitbullseye.com/Aptitude-Questions.php>  
<https://assessment.eklavya.com/Student/webcamtest>
- [2]. [https://www.google.com/search?q=camera+proctor+test&dq=camera+proctor+test&gs\\_lcrp=EgZjaHJvbWUyBggAEEUYOTIICAQABgWGB4yCAgCEAAyFhgeMg0IAxAGIYDGIAGIofMg0IBB](https://www.google.com/search?q=camera+proctor+test&dq=camera+proctor+test&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIICAQABgWGB4yCAgCEAAyFhgeMg0IAxAGIYDGIAGIofMg0IBB)  
[https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs\\_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215](https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215)
- [3]. [https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs\\_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215](https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215)
- [4]. [https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs\\_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215](https://www.google.com/search?q=aptitude+questions+for+placement&oeq=aptitude+questions+for+placement&gs_lcrp=EgZjaHJvbWUqBwgFEAAyGAAQyBggAEEUYOTIKCAEQABixAxiABDIQCAIQABiRAhixAxiABBiKBTIKCAMQABixAxiABDINCAQQABiRAhiABBiKBTIHCAUQARg80gEINzg2MWowajSoAgCwAgE&sourceid=chrome&ie=UTF-8&zx=1779645061215) Insights from educational mentors, daily school routines, and peer feedback.

