Research Article

Intelligent Physical Education Teaching Tracking System Based on Multimedia Data Analysis and Artificial Intelligence

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The education system begins a significant dimension characterized by continuous improvement and impacted by technology, society, and cultural developments. This pattern shows the need to enhance physical and athletic scientific training methods. To make the teacher’s role more successful is the usage of computer systems and other computing infrastructure. This article aims to show the use of Information and Communication Technology (ICT) in the national association for physical education. The digitalization consequences in the profession can be synthesized into the following elements: an operating system for learning, application essential to finish actions, findings recording, movement monitoring, video processing, efficiency correlation and synchronization, object tracking and duration measurement systems, and exercise assessment. While physical activity and athletics are realistic activities, current instructional technology is not sufficient. An intelligent physical education tracking system (IPETS) is proposed in this research. This study analyses and investigates the methodology for the formative assessment of athletic knowledge in computer evaluation. During the first segment, the evaluation technique for the athletic education program was presented. The second step of the paper is to understand the contents of the mathematical formula of particular activity based on the complete approaches proposed for the theory of assessment. A different phase of modernizing teaching activities using the computerized quality education for Artificial Intelligence (AI) technology is established in this article. The experimental findings are high in identifying university students’ regular exercise.

1. Introduction to the Physical Education System

With proper and effective teaching and learning environment, a physical training organization is designed to establish a rational and coherent learning method in the undergraduate syllabus [1]. When a person engages in physical exercise, the flow of blood to the brain rises. It enhances brain activity, care, memory, thinking, and intellectual abilities, the key to a kid’s development [2]. By natural, overall conditioning, the physical activity seeks to develop physiologically, socially, intellectually, and creative persons at play [3, 4].

The curriculum is arranged according to the substance of the physical training. Consequently, the main components of materials of physical education organization can directly change the durability and characteristics, impacting the learning technique of the students [5, 6]. An effective school organization demands improved job allocation, appropriate management supervision, and the correct interpretation of information to alter pupils’ functioning and characteristics [7]. It includes several activities to make it easier and more accessible for students to grasp via improved teacher co-ordination. Learners participate in physical workouts due to a low student/physical educator proportion [8]. Every availability is predicted to influence the access to proper management immediately; the specific focus is on physical tasks. The administration of special activities is vital to achieving instructional objectives [9].
The components of the sports education program are divided into so many subdivisions and graded into numerous elements to coordinate the instructional media of primary training and create them into a complete theoretical framework for strength and conditioning materials [10, 11]. Fitness conditioning directly teaches and enhances the skills and talents need to connect and communicate with everyone. It enables team and management skills to be developed and allows students to collaborate expertise in different areas of study [12].

For instance, this is accomplished by encouraging children to collaborate with others or participate in sports groups and community organizations as members in their schools and outside academia [13]. In addition, vertical and lateral organizational techniques for the general activity curriculum design are used to design the arrangement of information. Those two primary forms of organization and their specific contents have several essential and microfilm of organization [14].

The vertical arrangement emphasized that the sequence, coherence, and horizontal correlation gradually assessed the difficulties and depths of the material. The horizontal organization, content breadth, and scope richness underline material capabilities and side combinations [15, 16]. There are issues with the course content structure for strength conditioning and collaboration within the two organizations. The organization of the contents of the curricula should be rational and complete overall [17]. It shows that aligning the connection between the vertical and lateral organizations and guaranteeing that subtle educational content is converted into a comprehensive technical, conceptual framework is typically seen as the meaningful measure of education administration.

The structural complexity with numerous interrelated components is not usually a feature. Sophisticated, transparent processes can contain several elements and could be defined as simple systems capable of disassembling different pieces with predictable and accurate operations management. In other aspects, complex structures contain several elements, but each element is related to another. Any component is not inert but dynamic or adaptable.

The physical training goals in this article are given as follows:

(i) To the experimental nature of fitness exercise.

(ii) Practical repetition of the teaching content for physical exercise.

(iii) Design of the search rankings for university learners’ physical activity (PA) depending on the complex analyses provides the grading and classification procedure.

The remaining of the paper is as follows: Section 2 denotes the background of the physical education systems. The proposed intelligent physical education tracking system (IPETS) is designed and developed in Section 3. Section 4 depicts the software analysis and performance measurements. Section 5 illustrates the conclusion and findings.

2. Background to the Physical Education Systems

Internet of Things (IoT) provided educational knowledge to pupils. The learner and teacher were allowed to attain zero verbal interaction using this interface. Teachers can upload activities on their cellular phones with specific timelines to complete the tasks [18]. In addition, employ Wireless sensors, which allow smartphone apps to monitor and respond to information from signals in the actual environment. Strategic and inventive position-oriented developments might raise the issues of a pupil.

Learning strives to resolve the connection gaps among learners and educators in their connections [19]. This article highlighted the need to safeguard such programs, considering the number of protection defects in hardware implementations to keep the process secure. In this study, the protection of such systems was enhanced through two document analyses, complex automated development and factory equipment, which examined possible risks and dangers in this sector [20].

Wyant and Baek suggested a noninvasive brain method for a physical intelligence activity coaching component and outlined an Intelligent Teaching System (ITS) experimentation learner module utilized for reliable evaluations of instruction in PA [21]. Inputs utilized for quantification are the power evaluated for the regular exercise function, as well as the actual energy costs were dependent on the same action. At the same time, an evaluation at a particular sixth grade was dependent on the education grade.

Without interaction from teachers, the students tested their physical, educational capacity, and other areas. A direct objective technique was employed in measuring PA, and its precision could be more than regarded as suitable. Pocock and Miyahara established the identification of human activities through IoT devices [22]. They utilized algorithms to evaluate four groups’ behavior (wait, sit, stroll, and jog). Meanwhile, the programming of alerts before and afterward activities were delivered via a telemonitoring function with distant access [23].

This technique had been deployed with a favorable 75.8% success percentage. The method was meant to ensure that each patient followed every day the healing process through routine, practice, and physiotherapy [24]. Even though a safety analysis was required for an IoT methodology, the IoT method didn’t depend on a network of wireless sensors; the relevant data were not susceptible to a particular audience.

The sensors-based PA identification and surveillance model utilizing IoT were suggested by Bertills et al. [25]. The advent of the Internet of things had turned PA research into an uncontrolled, open, and interconnected environment by interacting with diverse wearable applications and wearables. It can meet the new difficulties of IoT settings by using traditional PA software or how these techniques are used and upgraded effectively [26]. A structured assessment was done on PA investigations from a conventional level to explain the usage of IoT.
Initially, it covered the cutting-edge techniques employed by traditional PA methodology in healthcare care, such as vision, extracting, and recognition processes suggested by Shaik and Patil [27]. The report identified and addressed specific critical approaches and novel patterns of investigation and difficulties inside the physical activity recognition model (PARM) investigation in IoT contexts. Finally, this article discussed some situations in which PARM’s intelligent health care had been effective in this area and potential future industrial uses. Sariyska and Montag started the notion of self for incentive and the connection between students and teachers throughout schooling [28].

The hypothesized connections between the research characteristics were explored using latent analysis of structural equation components [29]. The most significant change research resulted using the bootstrapping procedure has demonstrated excellent compatibility with the data. The approach had demonstrated increased autonomy, expertise, and connection and a more excellent self-determination rating among students experiencing an autonomous supporting environment [30]. Children’s self-reported motivation levels had predicted physical education (PE) efforts and teachers’ perseverance favorably. In PE contexts, the findings were examined to enhance student enthusiasm.

Giese and Ruin proposed identifying group activities and sensitivity analyses as a service (GASaaS) [31]. Suppose detector information was compiled using a mechanism for sharing information across the different devices acquired via wearable sensors, Wristwatch sensors, and GASaaS-specified built-in sensors [32]. This approach was exemplified by the solutions they offered to mudlarks and bushwalkers in a company. The model was shown as feasible and expressive as the recommended model. The method incorporates built-in sensors for mobile devices to identify activities or scenarios as customer services.

The inertial sensors generator had modeled and developed a variety of settings for demonstrating and evaluating the actions of the sportsperson, and the PE framework at the IPETS was presented in this study to solve these questions. Application of fuzzy inference system and output variable, in particular, can help to detect intensity inexactitude. The true importance of the notion of PA intensities language ambiguity was shown. Fuzzy sets were a suitable difficulty metric that translated the zone of potential misinterpretation into PA effectively.

3. Proposed Intelligent Physical Education Tracking System (IPETS)

This article proposes IPETS based on computer Information Technology (IT) for university physical education training and studies [33–37]. The PAs could be better defined by using fuzzy logic to a more robust analytical approach in this research amongst university graduates. The new schooling regime, a teaching notion focused on the learner, becomes vital for the concept of instructors throughout education. The notion based on each pupil must be appreciated. The mode of instruction involves in-time teacher-student contact. Just in this manner can instructors take into account the evaluation of PE training. This article created the computer assessment system for a particular activity to evaluate the course.

Figure 1 depicts the architecture of the proposed IPETS. It shows the PE and evaluation program’s internet servers and client-side configuration. The program’s primary purpose is to evaluate and analyze the instructor syllabus online, fix the management reports, examine the students, and evaluate them. During the evaluation, the application is executed by the administration.

The modern reform of education necessitates that the student is recognized as the center of learning [38–42]. The educational process must be participatory in real-time for instructors and learners. The regular C applications mode is a conventional computer education evaluation process which is a confined mode to evaluate the teaching method. By the objectives of the new educational reform, this article established a computerized assessment method for the take steps to address, which was controlling the servers and the customer. This method enables students to view and evaluate the evaluation findings and instructor effectiveness.

Teachers watch learners’ actual insight and instructors and learner commitment in actuality. It is a practical computer training assessment system using the shared foundation type of the Website and the virtual servers. This procedure permits actual teacher-student contact and reduces customer-server shuttered redundant information, and enhances computing-related performance levels. The framework for an examination is more significant and much more reliable.

The wireless model of the proposed IPETS system is shown in Figure 2. It has a speed acquisition module, wireless transmission modules, video playback modules, sports control unit, and training data display module. It demonstrates that several outcomes were created by the learners who submitted their teacher assessments. The IPETS, sophisticated analyses based on a computerized evaluation process and complete evaluation findings, can examine such assessments.

3.1. Analysis on the Application Advantages of Artificial Intelligence Technology in Physical Education. Constitute a smart environmental education sector, the time slice limitations for learning activity and the communicating of advanced educational assets, etc., about the issues in traditional colleges special activity and taking into account the significant benefits of AI technology in effectively integrating atmosphere and virtuality [43–48]. The conventional college primary fitness emanates fresh life via further discussions on the specific use of AI technology in special university activities.

3.1.1. Deep Integration of Internet Plus Technology with Virtual Reality (VR). The Online plus focuses on the effective integration of the Website’s easy and diverse benefits with conventional industries, modifying the structural base of old systems to improve production effectiveness. A simulation model that can replicate actual worlds is the core
of Virtual Reality technology. It can reduce the gap in teaching methods between professors and students. Physical activity is brief and poor teachers are unable to offer additional professional support to kids. Employing more broad and advanced Internet technologies and Virtual worlds can tackle this problem.

The atmosphere for physical training is thus more colorful and three-dimensional in academic institutions and can be achieved using the following example. Create an effective system for athletics education and advertise it as an element of the curriculum content to be used by learners. Second, educators encourage to submit information connected to sporting instruction on the system, such as videos, knowledge gained, and other material on the framework, so that the students search and study. Knowledge gained is available to people. Third, 3D animation is integrated into video instruction given the rigorous criteria for the primary training level of sports motions. In addition, it allows students to study more academic and practical information and to have a greater immersive storyline.

3.1.2. Intelligent Recognition Technology. Smart identification is a technological method by which information is gained by identifying apparatus, data processed by the computer science department is automatically identified, and feedback is provided. Smart identification technologies can contribute to enhancing the issue of unilateral instruction in conventional physical training. First, the foundation of classroom instruction is the kids coming to school. Smart identification technologies can thus be used in classes. The face identification system could profoundly remove signing options on everyone else, relative to conventional testing techniques such as questions reply and protocol inspection. It makes sure that inspection processes can be finished over a very brief time and therefore consider the consequences of class restraint and effectiveness. Second, smart identification technologies might also be used in the specialized athletic school curriculum. If pupils have problems throughout the education process, people typically get perplexed or do irregular sporting activities repeatedly. The Smart Identification System analyses and processes the material acquired through voice commands and identification of the face to better understand human behavior and the stage of education and retrieve the data to the teacher. To create more contact among professors and students better understood, the educators must better understand the challenges faced by the learners in physical training and enhance their educational consequences of making the sporting schooling more entertaining.
3.1.3. Big Data Analysis Technology. The technique of large datasets comprises the display of data, information gathering, and predictive analytics essentially. Data visualization technology might also display data to consumers intuitively as a core necessity of analytical instruments. The rising economy can be assessed by hypothesis testing associated with visual analysis findings.

Figure 3 shows the visualization module of the proposed IPETS system. It shows the processes of application of information visualization analytics technology comprising data collecting, access to data, collection of information, statistics, and evaluation of correspondences. Applying big data analytics technologies in university physical training increases the scientific, standardized, and effective instruction and administration. Instructors can put their assignments on the educational platform and encourage their pupils to send pictures or films. The endpoint of the learning management system is utilized to extract and process information from students with VR, computer vision, and other technology.

Then the learner’s learning outcomes are returned to their professors in information via visualization technology. Instructors can thus change the direction of the instruction and its development in time by using the data gathered. At the very same moment, the technologies of large datasets might also enable pupils to study more. Analyzing students’ progress, participation, and workplace patterns on the learning system can identify their interests and learning patterns to present a specific picture of students. It offers students better adapted physical, educational content, and techniques to reach the objective of pupils through additional predictions and analyses.

3.2. Fuzzy-Level Evaluation. Learners can use the proper vector table activities $p_y (y = 1, 2, \ldots, n)$ to calculate cognitive function $s(p_y)$, and it is expressed in equation (1):

$$ s(p_y) = \frac{V_{p_y}(1)}{V_{p_y}(1) + V_{p_y}(-1)} $$

As demonstrated in equation (1), which amount of incorrect uses of subcognitive abilities in the actions are represented $V_{p_y}(1)$ and $V_{p_y}(-1)$, respectively, the proper vector of utilization is derived in equation (2).

$$ S = (s_1, s_2, \ldots, s_n) \in (0, 1). $$

The elements of the vector are denoted $s_x$. From the assessment process, the right rate vector is determined in equation (3).

$$ S = \left\{ \begin{array}{ll} 2/3 & \text{if}\ 2/3 < m \leq 1 \\ 1/2 & \text{if}\ 0 < m \leq 1/2 \\ 1 & \text{else} \end{array} \right. $$

Therefore, the area $M$ varies from $(0, 1)$, which is the correct range for use. The fuzzy $M$ sub-sets are student performance evaluations (great, good, and bad). $M$ is the “good” fuzzy subset; $M_w(m)$ is the $W$ member feature, and it is expressed in equation (4).

$$ M_w(m) = \left\{ \begin{array}{ll} \frac{1}{1 + m/0.14} & m > 0 \\ 0 & \text{else} \end{array} \right. $$

In the application of the vectors and the mathematical explanations of the fundamental component activity ($m$): the participation rank of the sub-cognitive abilities is established using the suitable vector of use, and it is expressed in equation (5).

$$ W = \{w_1, w_2, \ldots, w_n\} \in (0, 1). $$

Y’s enrollment is highly qualified as a sub-cognitive and it is expressed $w_x$. The notion is that the activities are $P$ groups and that there are multiple assessment vectors. The assessment matrix is expressed in equation (6).
The elements of the evaluation matrix are denoted $w_{ij}$. The rows in the formulation of the matrices $HM$ correspond to an evaluation vector for a series of questions. As each $P$ activity plays different roles (some practice is typical in specific unit tests), different training sets fit different weight levels. A weight matrix is denoted in equation (7).

$$B = \{b_1, b_2, \ldots, b_p\} \quad \text{and} \quad \sum_{y=0}^{p} b_y = 1.$$  

(7)

The elements of the weight matrix are denoted $b_j$. The sum of all the elements of the weight matrix is always one. The weighted mean algorithm provides an exhaustive assessment of "a" vector. The learning capacity of the pupils is denoted in equation (8).

$$k = B \times HM = \{k_1, k_2, \ldots, k_n\}.$$  

(8)

Test scores, $k_1, k_2, \ldots, k_n$ denoted age, acquisition effectiveness, psychological circumstances, training, mood, etc., are considered the input nodes of the multimodal network, the values of outputs of network $C$ where multivariate and three-dimensional spaces are mapped nonlinearly and expressed in equations (9) and (10).

$$\text{Output} = \{\text{grade}, k_1, k_2, \ldots, k_n, w_1, w_2, \ldots, w_n\},$$  

(9)

$$C = \{C_1, C_2, C_3\}.$$  

(10)

As indicated above in $C_1, C_2, C_3$, the masters of skills, ideas, and implementation are referred to by the master of pupils. The test scores are denoted $k_1, k_2, \ldots, k_n$, the weight matrix elements are denoted $w_1, w_2, \ldots, w_n$, it would be helpful to integrate the idea into computers’ digital technologies to make the program more efficient; and the assessment model’s design uses the fuzzy set theory to evaluate the computational formula.

The fuzzy technique was used in the PA of university students to grade the issue. Whenever massive datasets are accessed, the advanced clustering technique updates incomplete data and utilizes prior classification results to enhance efficiency. The rankings hypothesis is that the quicker the group of the team approaches the grade. The consequence is an excessive dependency on the first clustering center and the fall into the grouping state because of the randomized clustering centers, leading to grouping outcomes and the instabilities in a statistical distribution.

3.3. Physical Education and Training System Based on Machine Learning and Internet of Things. The physical education training model based on machine learning is designed in this section. The proposed IPETS system uses IoT to support physical education training and machine learning to enhance system performance.

The workflow of the proposed IPETS system is shown in Figure 4. It uses a human-machine interface module and controller to track the performance of the athlete. It depicts the physical school curriculum data gathering architecture based on machines and the IoT. Whenever the client is training for sports, the sensor transfers to the actual training systems through the transmitter via the velocity information recorded from the speed collecting module. The proper training system receives the velocity data and directs the media player to move the image appropriately. The system delivers in live time the tracking information to the trainer accordingly. The platform gathers data on sports education, modifies the size of the module, and mimics the sporting tea procedure. This study presents a true athletic training systems control method. The algorithms innovate the essential phases of the early data processor and athletics computation of the authentic athletic training program principally. This approach can increase the accuracy of training examples, enhance the teaching environment and eventually enhance the science and efficiency of the complete system. Dynamically mounting incline data, partially polynomial fitted energy, and start streaming video speed are all three phases of the genuine motion control approach.

Multimedia technology provides a good visual actuality feeling and delivers a distinct sports encounter from 3D virtual athletics. Virtual items can be included in actual films. To accomplish smooth connectivity, it first creates virtual celestial objects in line with the actual geometries. The imaginary character motion should also be displayed in the actual video in the immediate environment.

This issue is a spatial problem, since owing to the presence of 3D objects, the geometrical restrictions imposed through the real world vary in time. The motive is to add imaginary elements to actual films. The synthesis of faithful animation, i.e., its responsiveness to virtual item movements, should achieve an acceptable standard compared to genuine human behavior. Once the new foot position has been identified in the camera, the increasingly virtual character must forecast these walkers’ future movement locations and modify their movements to prevent a crash with actual objects.

It has devised a technique in this article to incorporate imaginary characters smoothly into certain actual online scenarios. This work gives an algorithm for real-world sports training that replicates the effects of genuine sports activities in real-world images by innovating pre-data treatment and athletics methods. It then offers a Unique Path Planner. The online avatar can change its movements to maintain peace and achieve the predetermined goal, some statically indeterminate restrictions established by physical and virtual worlds.

Second, it presents an enhanced 3D virtual segmentation leveraging the camera prototype’s information and the closed environment’s topology. It removes several visual artifacts, ensures the final blended image quality, and
incorporates imaginary characters into an actual online video. This article develops an exact hybrid translation based on each imaginary organism's 2D matrix to integrate seamlessly.

The screen module is the main component of the whole system. Meaningful variations in athletic training examples can be reflected in the viewing chart created by the display unit. The complete display unit consists of five pieces: diagram 1, diagram 2, histogram, dispersion diagram, and pie diagram. A range of different indications is provided by the subsystem and diagrams of different measures per the demands.

The style and behavior of the user interface are equilibrated. "Consumer experience" is defined as the subjective emotions of the user whenever a product is used. That demonstrates significant subjective adaptability dependent on the user firm’s age, technology, geography, and culture.

Furthermore, the consumer user can’t interface only to end-users at requirement specification.

Figure 5 indicates the visualization module of the proposed IPETS system. It gets adaptive data from the camera and fits the data with the previously trained exercise data. User speed is found based on the calculation, and video playback is given to the display unit. Each extended data doesn’t interact with one another from the point of view of information transfer. There is no network connectivity between both the expansions, and every extension interacts with only the hosting. Every extender sends the information to the host in the programmed training stage between both the hosts and the extender. Only directed extensions are free workouts and unexpected activity data kept, and data retroactivity to ordinary people after a series of exercises displayed.

This component of the information cannot be requested twice and is destroyed locally regularly. The hosts are accountable for extending registrations, managing customer data, and publishing normal training plans again for the extensions plan to learn program. The total network customer module design is displayed. The client needs no big number of system data from the servers, and a single instance can satisfy performance expectations. It got a message in the messaging buffer list in sequence in the asynchronous socket callbacks procedure and then used the list to process and understand them. The processor thread has first to enroll the subscriber and record the data into the listening table. An update calls the relevant function to process the respective messages according to the audience table and protocols name.

Preparing in sports is an exceedingly difficult business. Even though the nation's urbanized places are rich with a machine learning algorithm, it does not suffice to digitize and automate, just limited current research fully. It enhanced the initial inertial motion control system due to the connection judgment and posture corrections based on contact location restrictions. The restoration of postures on the part of the trainee is further accurate. It also puts reflection points at the outer border of the training ground to get the athletic trainer data directly.
As other outcomes, they are looking for strategies to enhance their outcomes as circumstances, and make decisions when they do. Indeed, the students think through what they do, assess the techniques, approaches, and composing ideas effectively. They create a broad variety of skills and physical exercises. They create a broad variety of skills and physical exercises. A strong athletic education curriculum strongly encourages all kids to do a lot of physical exercises. They create a broad variety of skills and apply techniques, approaches, and composing ideas effectively. The students think through what they do, assess the circumstances, and make decisions when they do. Indeed, they are looking for strategies to enhance their outcomes as well as other outcomes.

### Table 1: Average participation ratio analysis of the proposed IPETS.

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<thead>
<tr>
<th>Number of dataset</th>
<th>Male (%)</th>
<th>Female (%)</th>
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<td>600</td>
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### Table 2: Evaluation score analysis of the proposed IPETS.

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<th>Number of dataset</th>
<th>Male (%)</th>
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The connection among the vertical structure shows the relationship among certain components in various fitness training stages following the initial curriculum. The significance of lateral connection in the syllabus of physical training increased the consistent link between the subject matter of the physical learning environment at different stages or test scores. It brings the syllabus content in line with the subject’s cohesive manner, the cognitive and physical phases, and the formation of the young person.

Teacher exercise increases children’s capability and willingness to participate in a range of physical exercises both within and without schools. A strong athletic education curriculum strongly encourages all kids to do a lot of physical exercises. They create a broad variety of skills and apply techniques, approaches, and composing ideas effectively. The students think through what they do, assess the circumstances, and make decisions when they do. Indeed, they are looking for strategies to enhance their outcomes as well as other outcomes.

### 4. Software Analysis and Findings

The relationship between strength and PA is complicated and bilateral. Several research studies have shown a substantial correlation between organizational endurance and PA, allowing reasonably active people to surpass PA, or the two. Empirical work has shown that exercise enhances health. All sporting activities aim to improve the health and wellbeing of the pupils. The simulation outcomes of the proposed model are verified in this section, with the dataset containing 100 students and five physical education students.

Table 1 depicts the average participation ratio analysis of the proposed IPETS. The simulation is done by varying the number of datasets from a minimum of 50 to a maximum of 600 with a step size of 50. The respective simulation outcomes, such as the average participation ratio, are analyzed separately for the male and female participants. As the size of the dataset increases, the respective performance of the user decreases. The proposed IPETS with fuzzy-based event tracking and performance evaluation model exhibits higher performance in all situations.

Table 2 indicates the evaluation score analysis of the proposed IPETS. The simulation outcomes for the male and female candidates are analyzed separately for the evaluation process, and their scores are compared. As the size of the dataset increases, the respective evaluation scores also vary. The proposed IPETS with fuzzy evaluation model and event tracking system accurately evaluates the efficiency of the participants and hence produces better results than others models. The male candidates perform well than the female candidates.

Figures 6(a) and 6(b) indicate the average participation analysis of the male and female candidates of the proposed IPETS, respectively. The simulation is done by varying the size of the dataset from the minimum level to the maximum level. As the dataset varies, the respective outcome of the participants also decreases. The proposed IPETS with fuzzy evaluation model and event tracking system accurately evaluates the efficiency of the candidates. The male candidate’s performances well in all physical education activities than the female candidates because of their high stamina and fitness.

Figures 7(a) and 7(b) show the evaluation score analysis of the male and female participants using the proposed IPETS. The simulation analysis of the male and female candidates is done using the proposed IPETS and the given dataset. The size of the dataset is varied from minimum to the maximum level for the simulation analysis. The male candidates exhibit higher performance than the female candidates because the male candidates have a higher fitness level and higher stamina for long-time workouts. The proposed IPETS with a fuzzy evaluation system produces results with higher accuracy, which helps to better coaching and training of the students.

The data processing evaluation analysis and the data processing speed analysis of the proposed IPETS are shown in Figures 8(a) and 8(b). The proposed IPETS is designed, and the performance of the system is evaluated using the given dataset. There are 25 candidates (male and female) taken for the analysis from the given dataset. Their respective simulation outcomes, such as data processing score and speed, are analyzed and plotted. The proposed IPETS with a fuzzy evaluation system exhibits higher accuracy in evaluation with lower complexity.

The proposed IPETS is designed, analyzed, and tested in this section. The simulation outcomes such as processing
Figure 6: (a) Average participation ratio analysis of male candidates. (b) Average participation ratio analysis of the female candidates.

Figure 7: (a) Evaluation score analysis of the male participants. (b) Evaluation score analysis of the female participants.

Figure 8: (a) Data processing evaluation analysis of the proposed IPETS. (b) Data processing speed analysis of the proposed IPETS.
speed, evaluation score, and the proposed IPETS with the given dataset are analyzed. The results show that the proposed IPETS with event tracing and fuzzy-based evaluation models produces higher results with lower system complexity.

5. Conclusion and Findings

This article provides an intelligent physical education tracking system (IPETS) for undergraduate training and education sciences with computer-based digital technologies. The assessment of athletics courses is performed using the computing growth of IT and the improvement of the PE systems. Instructors and learners must communicate information promptly in physical instruction, improving their instructional performance and efficiency. The information systems assessing mode of the PE curricular and the development of a PE mathematics evaluation method relies on IPETS. Finally, the study introduced the programmed computer code of the PE curricular evaluation framework using the C program and the expert’s weighting factor for the PE curricula appraisal. It develops a computerized assessment instrument for physical training, which offers a theoretical basis for the technique of physical training. In the future, the system outcomes can increase by using the deep learning model.

Data Availability

The dataset can be accessed upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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