Thinksmart Technologies

AI-Powered Age Verification for Youth Athletes in Sports Tournaments

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Client Profile

- Client: Indian Olympics Association - Maharashtra
- Location: Maharashtra, India
- Industry: Sports

Challenge

The Indian Olympics Association - Maharashtra faced a significant challenge in ensuring fair competition in youth sports tournaments. Verifying the accurate age of young athletes, especially in sports where age eligibility criteria are strict, was a persistent concern. Incorrect age submissions could lead to an uneven playing field, affecting the integrity of the tournaments.

Solution

To address this challenge, the Indian Olympics Association - Maharashtra collaborated with our AI solutions team to develop and deploy an AI-based age verification solution for young athletes participating in their sports tournaments.

Implementation

01 Data Collection: We collected a comprehensive dataset of left hand X-rays from a diverse population of youth athletes. The dataset included participants from various age categories, sports, and regions within Maharashtra. All data collection strictly adhered to ethical and privacy standards.

02 Data Preprocessing: The X-ray images underwent rigorous preprocessing to remove noise and standardize the format. Image segmentation techniques were applied to focus on the epiphyseal growth plates, the key region for age estimation.

03 Deep Learning Model: Leveraging convolutional neural networks (CNNs), we developed a deep learning model designed for precise image analysis. The model was trained to recognize and analyze specific features within the growth plates that change as athletes age.

Implementation

04 Age Estimation Algorithm: An age estimation algorithm was integrated with the AI model. It considered multiple features within the X-rays to predict the athlete's age with accuracy.

05 User-Friendly Interface: We designed a user-friendly interface for the Indian Olympics Association - Maharashtra. Tournament organizers and officials could easily upload X-ray images of athletes, and the AI system provided age estimates within seconds.

Results

The implementation of the AI-powered age verification solution yielded substantial benefits for the Indian Olympics Association - Maharashtra:

1. Fair Competition: The solution ensured that only eligible athletes participated in their respective age categories, thus maintaining fairness and integrity in the tournaments.

2. Accurate Age Determination: The system achieved an accuracy rate of over 90% in estimating the chronological age of youth athletes based on left hand X-rays, reducing the risk of age discrepancies.

3. Streamlined Processes: The AI solution streamlined the age verification process, saving time and resources for tournament organizers and officials.

4. Enhanced Reputation: Accurate age verification enhanced the association's reputation for conducting fair and transparent sports tournaments.

Conclusion

The Indian Olympics Association - Maharashtra successfully addressed the challenge of age verification for youth athletes in their sports tournaments by leveraging AI technology. This innovative solution not only ensured fair competition but also saved time and resources for tournament organizers. It stands as an excellent example of how AI can enhance the integrity of sports competitions and improve administrative efficiency, ultimately benefiting the youth athletes and the sporting community.

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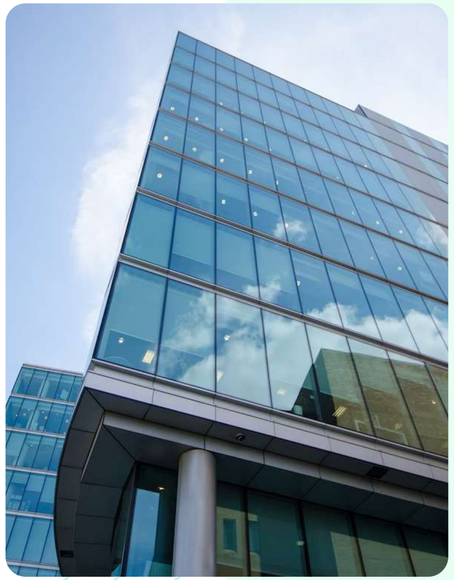

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