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Sport Sciences

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I am honored to discuss the transformative power of motion-capturing technology in the realm of sports. The integration of motion-capturing systems into sports applications has not only revolutionized athlete training and performance analysis but has also enriched the fan experience and expanded the boundaries of what is possible in the world of sports. Motion-capturing technology has come a long way since its inception, evolving from its roots in the film and gaming industry to becoming an invaluable tool in the world of sports. Today, I want to shed light on how this technology is making a profound impact on various aspects of sports, from athlete development to fan engagement.



The motion-capturing systems provide coaches and athletes with an unprecedented level of insight into an athlete's performance. These systems can capture every nuance of an athlete's movement, allowing for detailed analysis of techniques, form, and biomechanics. This data is instrumental in identifying areas for improvement and optimizing training regimens. It helps athletes refine their skills, prevent injuries, and reach peak performance. By closely monitoring an athlete's movements, motion-capturing systems can detect subtle irregularities that may lead to injuries. Coaches and sports medicine professionals can use this data to develop personalized injury prevention programs. This not only prolongs an athlete's career but also ensures their long-term health and well-being. In professional sports, success often hinges on the smallest of margins. Motion-capturing technology allows for precise performance analysis, enabling athletes to fine-tune their strategies and gain a competitive edge. It can be used to break down an opponent's movements, helping teams formulate winning strategies.

Currently, the applications of the motion-capturing system, the gait analysis, and sports modules (running, cycling, golf, and baseball) are created by the Qualisys software. The gait analysis is intended to analyze human walking and uses diagnostics and treatment of pathological gait. The running module has been proven both in research, and performance optimization in commercial use all over the world. This module gives the ability to measure lower body movement. The resultant report displays a range of relevant parameters such as pelvic rotation, knee angle, and more. The cycling module is designed to develop a deep understanding of the biomechanics of cyclist's movements in a sport that has

traditionally focused on the mechanics and performance of the bike itself. Moreover, with the performance version of the module, force plates may be used to capture ground reaction force and measure the center of pressure. Therefore, the system recognizes all events and motions based on the biomechanical calculations.

In conclusion, as we move forward, I encourage all stakeholders in the world of sports to embrace this technology and explore the endless possibilities it offers for the betterment of athletes, teams, and the enjoyment of sports enthusiasts worldwide. Finally, may the future of sports be filled with even more astonishing advances in motion-capture technology.

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