1.	Record Nr.	UNINA9910855374403321
	Autore	Memmert Daniel
	Titolo	Sports Technology : Technologies, Fields of Application, Sports Equipment and Materials for Sport / / edited by Daniel Memmert
	Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer Spektrum, , 2024
	ISBN	9783662687031
	Edizione	[1st ed. 2024.]
	Descrizione fisica	1 online resource (272 pages)
	Altri autori (Persone)	Memmert
	Disciplina	796.015
	Soggetti	Sports sciences
		Recreation - Equipment and supplies
		Biomedical engineering
		Sport Science
		Sport Technology
		Biomedical Engineering and Bioengineering
		Sport Analytics
		Sports Biomechanics
		Medical and Health Technologies
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	I Data acquisition systems -- Tracking data -- Biomechanical data -- Self-regulated learning employing marker-less movement analyses in the context of university education in sports -- Wearable Technologies -- Diagnosis of motor performance using exoskeletons -- Inertial sensing in sports -- Using Inertial Measurement Units (IMUs) in performance and behavioural analysis -- II Sports equipment and materials -- Controlled sliding as injury prevention -- Mechatronic ski binding -- Aspects and approaches for the development of digital training assistants -- Sports floor characteristics -- III Diagnostics -- Soccerbot360 -- Virtual reality -- Video-based human action recognition and its application in dance research -- Sports measuring and information systems and biomechanical feedback training -- Innovative technologies for gait and stance analysis -- Panoramic ultrasound imaging and MyotonPRO -- IV Evaluation and

communication -- Feedback systems -- Smartphone Apps -- Movement Sonification – Intermodal Transformation of Movement Data to enhance Motor Learning -- V Selected fields of application -- Metrics in Soccer -- Serious Games -- The Digital Twin – New Opportunities for Diagnostics and Control? -- Vibrations and damping systems in cycling -- Performance Analysis in Soccer -- Esport Assessment -- Video-based decision support for referees in sports games -- Evolutionary Algorithms.

| Sommario/riassunto | Sports technological tools and innovations are gaining increasing significance in amateur, elite, and health-related sports. Sports technology refers to the application of scientific and technical principles, along with innovative technologies, to enhance athletic performance, increase safety, and consequently optimize the overall sporting experience. This involves the design, development, and utilization of equipment, devices, systems, and software specifically tailored for athletic purposes. This textbook aims to encompass the broad diversity of sports technology by featuring contributions from over 30 authors within their respective specialized fields, summarizing the latest insights concisely. The work is structured into five main sections: Data Acquisition Systems, Sports Equipment and Materials, Diagnostics, Evaluation and Communication, and Selected Fields of Application. Students with a connection to sports science gain a comprehensive understanding of sports technology supported by a carefully designed concept that facilitates easy delivery of learning content. Digital learning cards (SN Flashcards) reinforce the learning effect and ensure optimal exam preparation. For advanced learners, in-depth discussions on topics such as tracking data, digital training assistants, sports floor characteristics, virtual reality in sports, smartphone apps, and diagnostic tools offer additional value. The Editor Prof. Dr. Daniel Memmert is the Managing Director and Professor at the Institute of Exercise Training and Sport Informatics at the German Sport University Cologne. He is the editor and author of numerous textbooks, focusing on exercise science, sports psychology, and computer science in sports. His institute organizes two certificate programs (Match Analysis Team Cologne / Sports Director in Youth Performance and Amateur Soccer) as well as the first international postgraduate program in 'Match Analysis'. |