

Special issue International Journal of Computer Science in Sport



Guidelines for the authors

TRENDS IN WEARABLE SENSOR TECHNOLOGY FOR SPORTS, FITNESS, AND WELL-BEING

Wearable sensor technologies are transforming the fields of sports, fitness, and well-being by enabling real-time measurement and analysis of biomechanical, physiological, and bio-vital characteristics. These innovations aim to improve performance, reduce the risk of injury and enhance overall fitness. Wearables are widely utilized in professional and recreational sports to track movement patterns, energy expenditure, and other key metrics like heart rate, speed, and acceleration. By integrating sensor data with advanced computational methods such as Artificial Intelligence (AI) and Machine Learning (ML), experts can derive actionable insights that help athletes, trainers and healthcare professionals make data-driven decisions.

Wearable technology extends beyond athletics to healthcare applications, with devices designed to collect fitness and health data, enabling individuals to share real-time information with physicians and insurers. While many wearables are not FDA-regulated, as long as they focus on general health improvement, those claiming medical benefits such as disease prevention or treatment are subject to stringent oversight. Wearable medical devices leverage biosensors to monitor parameters like activity levels, blood pressure, heart rate, and sleep patterns. The ergonomic risks associated with repetitive or high-impact tasks can also be assessed using wearable technology and AI, facilitating safer work procedures and optimized training strategies.

The primary goal of this special issue is to focus on computational approaches for processing and analyzing data collected from wearable sensor technologies. This includes integrating IoT-enabled wearable systems, developing novel data conversion techniques and applying AI and ML to enhance sensor data analysis and classification. Contributions are invited to explore interdisciplinary frameworks and applications, with a particular emphasis on sports performance, fitness, and overall well-being. Applications comparing sensor technologies, analyzing high-performance metrics, and addressing fitness and rehabilitation use cases are particularly encouraged. A well-structured focus on technologies, data analysis and real-world applications will provide a comprehensive overview of current trends and future directions.

List of Interested Topics

- Latest developments in wearable and flexible sensors for use in sports, fitness, and well-being.
- Advanced data analysis techniques for sensor data using AI and ML in sports and healthcare.
- ➤ A review of endurance, power and strength applications leveraging wearable sensor data.
- ➤ Internet of Things (IoT) integration with wearable sensors for sports rehabilitation and fitness tracking.
- > Sensing techniques in biomechanical wearable devices for sports and physical activities.
- A comparative analysis of sensor technologies for tracking athletic performance and rehabilitation.
- > Wearable sensors for monitoring athletes' physiological and metabolic profiles.
- ➤ High-performance versus fitness and well-being applications of wearable sensors.
- A wearable gadget and biometric data collection system for sports and fitness tracking.
- ➤ An overview of flexible wearable sensor-based vital signal monitoring for physical activity.
- Data-driven insights for enhancing sports performance and rehabilitation using wearable sensors.
- Applications of biomedical sensors and wearable technology for sports fitness and monitoring hand-arm movements.

Submission guidelines

The following types of communications will be published:

- Full papers (research papers or scientific reports) of 12 to 15 single-spaced pages
- Reports (e.g. projects) of up to 5 single-spaced pages. A recommendation of the project director and topicality arguments are required.
- Extended essays (summaries of master thesis, etc.) of up to 3 single-spaced pages. A recommendation of the supervisor is required.

Review Process

Full papers will be reviewed by two reviewers through a blind review process. Reports and extended essays are read by Editorial Board Members. Comments are occasionally sought elsewhere.

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All papers submitted to the IJCSS should be electronically sent in Microsoft Word format using the IJCSS template, which can be downloaded here. Please read carefully the "guidelines for authors" for detailled information regarding the correct format of writing. Submitted papers will be rejected if they do not follow these guidelines.

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- the material submitted is original and unpublished;
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- the material will not be submitted for publication elsewhere while it is under consideration for publication in the IJCSS;
- if accepted for publication in the IJCSS, the material will not be submitted elsewhere for publication, either in part or in whole, without the written consent of the Editor in Chief.

Material submitted will not enter the refereeing process until such an undertaking has been received.

Article General

The article must be in American English using SI units. It must be in Times New Roman size 12 font throughout, fully justified, with a 3 cm margin on the both sides, with pages numbered consecutively, with no line numbering and no 'headers and footers' (other than page numbers). Arrange the article under headings (such as Introduction, Methods, Results, Discussion, Conclusions) and subheadings.

Abstract

Include an abstract of not more than 200 words that summarizes the paper and gives a clear indication of the conclusions it contains. It should be inserted in the article after the Authors' addresses, indented by 1 cm from both sides of the normal text (i.e. 4 cm. margin in total). The abstract must not contain figures or tables.

Key Words

A list of up to 5 key words that describe the general content of the contribution should be included after the abstract.

Tables and illustrations

Illustrations, plates, tables and any other artwork should be included in the electronic submission. Tables must be clearly and simply laid out with clear row and column legends, units where appropriate, no vertical lines and horizontal lines only between the table title and column headings, between the column headings and the main body of the table, and after the main body of the table. Photographs and line drawings, referred to as 'Figure 1', 'Figure 2', and so on, must be numbered in the order in which they occur in the text.

References

Provide complete, APA-formatted references and text citations and make sure that the two correspond exactly. The APA Manual provides (a) detailed guidelines on preparing references and citations and (b) many excellent sample references and citations. The manual includes the requirement that, when typing a reference for a chapter in an edited book, the inclusive page numbers of the chapter must be added.

The issue number of a journal should be included only to avoid confusion, as when for example the pagination starts from 1 in each issue rather than being continuous across a volume; in such cases use 16(4), etc.

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Important Dates

- Deadline for submissions will be due on 22nd August 2025
- The preliminary notification will be due on 15thOctober 2025
- Revision will be due on 20th December 2025
- Final notification will be due on 25th February 2026
- The final publication process will be followed based on journal direction