

News Release

August 4, 2025

TS TECH Visualizes Fatigue and Concentration Levels Using Fatigue Level Estimating AI Seats and Demonstrates the Effectiveness of the Seats Through e-Sports

Improving the performance of e-sports athletes with devices to visualize body condition



TS TECH Co., Ltd. (Head Office: Asaka-shi, Saitama; President: Masanari Yasuda), which develops, manufactures, and sells interior products for automobiles, is currently developing technologies to visualize fatigue and concentration levels of those who use seats by using the passenger sensing technologies amassed in the development of seats for automobiles, its major product line. Feasibility testing by e-sports athletes of a gaming chair equipped with these technologies has demonstrated their effectiveness.

■Background

In November 2023, the TS TECH Group formed a business alliance with KICONIA WORKS, Inc. (Head Office: Shibuya-ku, Tokyo; Representative Director: Takuro Shogami) to create new value in various domains, including development, production, and management, through the development of artificial intelligence (AI) algorithms.

As part of these efforts, the alliance has undertaken research and development on algorithm technologies that estimate fatigue and concentration levels based on pulse and body pressure data of those who use seats. In September 2024, research and development and feasibility testing began in partnership with professional e-sports athletes and students at the Human Academy e-Sports College, operated by Human

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Academy Co., Ltd. (Head Office: Shinjuku-ku, Tokyo; Representative Director: Kenji Imahori). These initiatives have explored visualization of e-sports athletes' body condition during competitions and related changes in behavior by using gaming chairs equipped with a system that applies these algorithms to visualize fatigue and concentration levels.

■ Summary of Feasibility Testing

Objectives:

1. To verify the accuracy of fatigue and concentration level estimation algorithms
2. To verify the impacts of visualizing athletes' body condition on their behavior and competitive performance

Period:

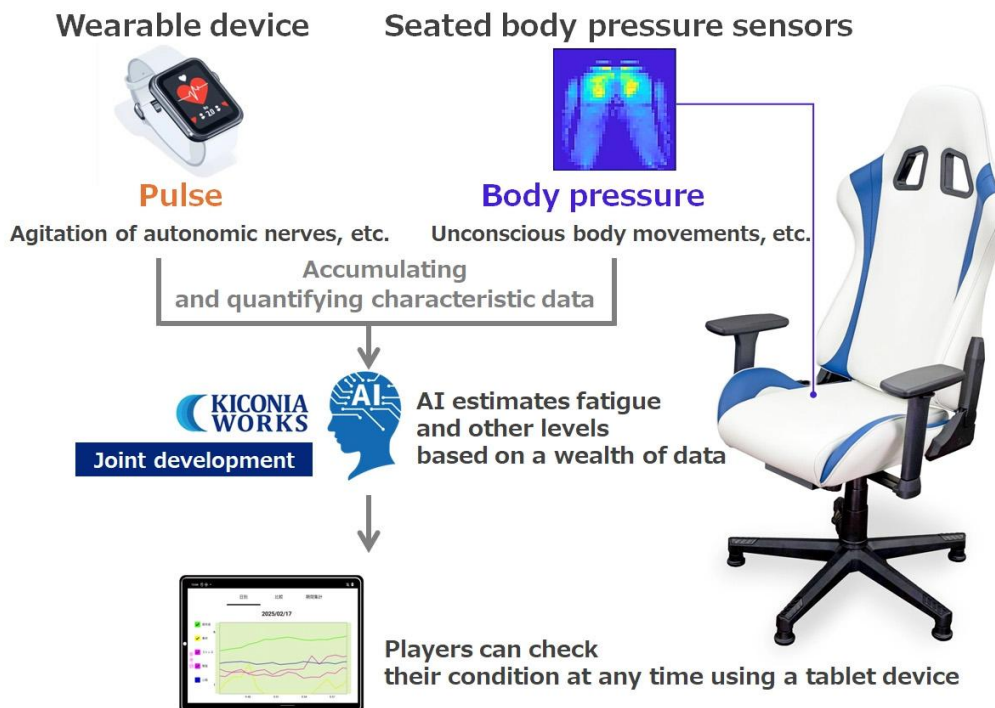
April–June 2025

Subjects:

Students of the Human Academy e-Sports College Akihabara Campus

<System structure>

<System structure>



■ Test Results

<Accuracy of fatigue and concentration level estimation algorithms>

Fatigue level:

The majority of the participants reported that measurements matched the fatigue

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level they felt, although some felt that their subjective state differed slightly from the measurements.

Concentration level:

All participants reported that measurements matched their actual concentration level.

〈Changes in behavior as a result of visualization of body condition〉

All participants became more mindful of taking breaks, both during competitions and in everyday life, due to the capacity to visualize their own fatigue and concentration levels.

〈Results of changes in behavior〉

Results showed that being able to take breaks at optimal times helped prevent the buildup of fatigue during competitions and improved competitive performance.

■Outlook

The growth of the e-sports market is driving up interest in performance improvement and health management for athletes. In response to this demonstration of the effectiveness of its technologies for visualizing user fatigue and concentration levels, the TS TECH Group will examine future commercialization. While current system development is focused on visualization technologies, the Group plans to develop products that offer higher added value by combining these technologies with other features to propose improvements based on athletes' body condition as well as with technologies amassed in its development of seats for automobiles to enhance comfort.

The TS TECH Group will also use the data and user feedback collected in this testing in its development of seats for automobiles, its major product line, to develop products that combine high levels of safety and comfort, such as driver support seats that prevent distracted driving and automotive cabins that prevent fatigue. Based on its vision statement, "A company dedicated to realizing people's potential" and "A company sincerely appreciated by all," the TS TECH Group seeks to provide valuable products to customers around the world that surpass their expectations.

■Overview of TS TECH

Company Name: TS TECH Co., Ltd. (TSE Prime Market Securities Code: 7313)

Established: December 5, 1960

Representative: President (Representative Director) Masanari Yasuda

Capital: 4,700 million yen

Head Office: 3-7-27 Sakae-cho, Asaka-shi, Saitama 351-0012, Japan

Lines of Business: Manufacture and sale of seats for automobiles; interior trim and interior components for automobiles; motorcycle seats; and motorcycle parts and accessories

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