



Important: Acceptance of Abstract for Presentation at SPECTRUM 2026 and registration details

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Dear Author,

Thank you for submitting your abstract to the **7th International Conference on *Current Advancements in Science and Technology (SPECTRUM 2026)***.

We are pleased to inform you that your abstract has been **accepted for presentation** at the conference. The *mode of presentation (Oral/Poster)* will be communicated to you in due course after further review and scheduling.

To **confirm your participation**, we kindly request you to complete the **registration process on or before 7th February 2026**.

Details regarding the registration fees, payment procedure, and important dates are available on the conference website:

 <https://spectrum.smartsociety.org/registration.html>

Registration Fee Details – SPECTRUM 2026

IEM Students: 1500 INR (After Special Discount)

**Payment Details **

Authors/participants are requested to pay the registration fee to the following bank account:

- **Account Name:** *Institute of Engineering and Management Trust*
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After completing the payment, please fill out the **Google Form for paper presenters**:

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Details regarding **full paper submission and publication procedures** will be communicated later. Please note that **publication fees, if applicable, may be charged separately**, depending on the publisher.

We look forward to your **valuable contribution and active participation** in **SPECTRUM 2026** ✨.

For any queries, please feel free to contact us.

Warm regards,

Convenors

7th International Conference on

Current Advancements in Science and Technology

SPECTRUM 2026

Chapter

Smartwatch-Enabled Continuous Health Monitoring System Using Machine Learning Techniques

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Abstract

This paper presents a comprehensive approach and holistic perspective on the application of smartwatches in modern healthcare monitoring systems and attempts to propose another aspect of usefulness of smartwatches or fitness bands. It focuses on continuous physiological data acquisition through a smartwatch in both clinical and non-clinical settings. Key physiological parameters include heart rate, electrocardiogram (ECG), blood oxygen saturation (SpO₂), blood pressure, and other physical activity indicators which are generally analyzed in the smartwatch. Analysis of the human affecting continuous data by training with various machine and deep learning models for accurate prediction which includes, Support Vector Machine (SVM), Support Vector Regression (SVR), Long Short-Term Memory (LSTM), Multi-Layer Perceptron (MLP), XGBoost and few more techniques, which ensures detection of healthcare problems at an early stage. The experimental analysis of the work demonstrates the effectiveness of various predictive models, including XGBoost (97%) for hypertension and stroke prediction, Support Vector Machine (90%) for heart attack prediction, and Logistic Regression (~80%) for prediction of parameters of ICU patients. The paper outlines a conceptual system architecture for a real-time smartwatch-based healthcare monitoring device for preventive care, and early risk detection for the human healthcare. The suitability of smartwatches in hospitals is also discussed, with applications in remote patient monitoring in intensive care units and long-term care for elderly patients with chronic conditions, cardiovascular diseases, hypertension, and pulmonary disorders. Finally, the work addresses the current challenges in implementing smartwatch-based healthcare systems.

Keywords: Healthcare Monitoring System, Physiological Parameters, Deep Learning, Machine Learning, Smartwatch, Disease Prediction