Special Issue

Advanced Human–Computer Interaction and Brain–Computer Interface in Industrial 4.0 Era

Message from the Guest Editors

The continuous advancement of Industry 4.0 technologies has reshaped how humans interact with machines, systems, and our surrounding environment. As digital transformation accelerates, the integration of advanced human–computer interaction (HCI) techniques and brain–computer interface (BCI) systems is becoming increasingly vital in enhancing productivity, safety, and personalization in industrial settings. This Special Issue aims to bring together cutting-edge research and practical applications that highlight novel interaction paradigms, including neuroadaptive systems, gesture and emotion-based controls, immersive interfaces (e.g., AR/VR), and real-time neural signal processing for smart manufacturing, robotics, and cyber–physical systems. We are particularly interested in contributions that:

- Develop or apply machine learning and deep learning algorithms for HCI and BCI optimization;
- Enhance human–robot collaboration through intelligent interaction modalities;
- Improve decision-making in industrial control systems via cognitive feedback mechanisms;
- Advance sensor fusion and multimodal interaction for adaptive industrial applications.

Guest Editors

Dr. Ahmet Cagdas Seckin

Computer Engineering Department, Engineering Faculty, Aydın Adnan Menderes University, Aydın 09100, Türkiye

Dr. Fatih Soygazi

Computer Engineering Department, Engineering Faculty, Aydın Adnan Menderes University, Aydın 09100, Türkiye

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

Editor-in-Chief

Prof. Dr. Flavio Canavero
Department of Electronics and Telecommunications, Politecnico di Torino, 10129 Torino, Italy

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