



biosensors



Special Issue Reprint

Intelligent Biosignal Processing in Wearable and Implantable Sensors

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Edited by
Hariton-Nicolae Costin
Saeid Sanei



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This reprint provides a collection of papers illustrating the state-of-the-art of smart processing of data coming from wearable, implantable or portable sensors. Each paper presents the design, databases used, methodological background, obtained results, and their interpretation for biomedical applications. Revealing examples are brain-machine interfaces for medical rehabilitation, the evaluation of sympathetic nerve activity, a novel automated diagnostic tool based on ECG data to diagnose COVID-19, machine learning-based hypertension risk assessment by means of photoplethysmography and electrocardiography signals, Parkinsonian gait assessment using machine learning tools, thorough analysis of compressive sensing of ECG signals, development of a nanotechnology application for decoding vagus-nerve activity, detection of liver dysfunction using a wearable electronic nose system, prosthetic hand control using surface electromyography, epileptic seizure detection using a CNN, and premature ventricular contraction detection using deep metric learning. Thus, this reprint presents significant clinical applications as well as valuable new research issues, providing current illustrations of this new field of research by addressing the promises, challenges, and hurdles associated with the synergy of biosignal processing and AI through 16 different pertinent studies. Covering a wide range of research and application areas, this book is an excellent resource for researchers, physicians, academics, and PhD or master students working on (bio)signal and image processing, AI, biomaterials, biomechanics, and biotechnology with applications in medicine.



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