Advances in Soft Computing

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Ewa Pietka, Jacek Kawa (Eds.) Information Technologies in Biomedicine, 2008 ISBN 978-3-540-68167-0
Preface

Information Technologies do not recognize borderlines between disciplines. This research area rather follows the tradition of interdisciplinary cooperation which requires attention to be given to the needs of other people. In information technologies in biomedicine three very different and specific partners are to work together. Patients needs are recognized by physicians who collaborate with scientists and engineers. This defines the goal of our research which is to satisfy the functional requirements of authorized physicians for the benefit of the patients.

In this book, members of the academic society of technical and medical background present their research results in order to bridge the gap between information technologies and clinical medicine. Researchers who explore the area of medical imaging, biomedical signals, and biotechnology discuss various innovations that change the way of solving problems. New approaches to data processing and recognition increase the efficiency of medical diagnostic and treatment and permit more information to be extracted from the acquired data. The information is then put at the disposal of authorized physicians at the place and at the time it is required, in a format adapted to the specific needs of the physician and the patient.

An extended area is covered by the articles. It includes biomedical signals, medical image processing, recognition, and understanding, text processing and natural language analysis, telemedicine, computer-aided diagnosis and treatment, biomaterials. Papers present various theoretical approaches and new methodologies based on fuzzy sets, mathematical statistics, morphological methods, fractals, wavelets, syntactic methods, artificial neural networks, graphs and many others.

We would like to express our gratitude to all paper reviewers as well as the authors who have contributed their original research papers.

Gliwice
June 2008

Ewa Piętka
Jacek Kawa
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