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The series “Advances in Intelligent Systems and Computing” contains publications on theory, applications, and design methods of Intelligent Systems and Intelligent Computing. Virtually all disciplines such as engineering, natural sciences, computer and information science, ICT, economics, business, e-commerce, environment, healthcare, life science are covered. The list of topics spans all the areas of modern intelligent systems and computing.

The publications within “Advances in Intelligent Systems and Computing” are primarily textbooks and proceedings of important conferences, symposia and congresses. They cover significant recent developments in the field, both of a foundational and applicable character. An important characteristic feature of the series is the short publication time and world-wide distribution. This permits a rapid and broad dissemination of research results.

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Volume 1: Mathematical Foundations,
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Foreword

This two volume set of books constitutes the proceedings of the 2014 IEEE 7th International Conference Intelligent Systems (IS), or IEEE IS'2014 for short, held on September 24–26, 2014 in Warsaw, Poland. Moreover, it contains some selected papers from the collocated IWIFSGN'2014 - Thirteenth International Workshop on Intuitionistic Fuzzy Sets and Generalized Nets held on September 25, 2014.

The conference was organized by the Systems Research Institute, Polish Academy of Sciences, Department IV of Engineering Sciences, Polish Academy of Sciences, and PIAP – Industrial Institute of Automation and Measurements. It was sponsored by the Poland Section of the IEEE (Institute of Electrical and Electronics Engineers) CIS (Computational Intelligence Society), and the Polish Operational and Systems Research Society. The technical sponsors included the IEEE Systems, Man and Cybernetics Society, the IEEE Computational Intelligence Society, the Polish Neural Network Society, the Polish Association of Artificial Intelligence, and the Polish Operational and Systems Research Society.

The conference had a special session devoted to the presentation of results obtained within the “International PhD Projects in Intelligent Computing” and these two volumes contain the respective papers. The conference gathered both the Ph.D. students participating in the Project and their supervisors from Poland and abroad, as well as some foreign partners involved in the Project providing an excellent opportunity for the publication and dissemination of contributions by young researchers. This project was supported by the Foundation for Polish and financed from the European Union within the Innovative Economy Operational Programme 2007-2013 and European Regional Development Fund.

The papers included in the two proceedings volumes have been subject to a thorough review process by three highly qualified peer reviewers. Comments and suggestion from them have considerably helped improve the quality of the papers but also the division of the volumes into parts, and assignment of the papers to the best suited parts.

Thanks are due to many people and parties involved. First, in the early stage of the preparation of the conference general perspective, scope, topics and coverage, we have received an invaluable help from the members of the International Program Committee, notably the chairs responsible for various aspects of the Conference, as well as

people from the IEEE, notably Mr. Kevin Uherek, who helped make formal arrangements that would be most proper for this particular Conference. In fact, an overwhelming majority of members of the International Program Committee had been the members of all our sponsors which had provided an extraordinary situation of a synergy between the International Program Committee and all the sponsoring parties. That help during the initial planning stage had resulted in a very attractive and up to date proposal of the scope and coverage that had clearly implied a considerable interest of the international research communities active in the areas covered who had submitted a large number of very interesting and high level publications. The role of many session organizers should also be greatly appreciated. Thanks to their vision and hard work, we had been able to collect many papers on focused topics which had then resulted, during the Conference, in very interesting presentations and stimulating discussions at the sessions.

The members of the International Program Committee, together with the session organizers, and a large group of other anonymous peer reviewers had undertaken a very difficult task of selecting the best papers, and they had done it excellently. They deserve many thanks for their excellent job for the entire community who is always concerned with the quality and integrity.

At the stage of the running of the Conference, many thanks are due to the members of the Organizing Committee, chaired by Ms. Krystyna Warzywoda and Ms. Agnieszka Józwiak, and supported by their numerous collaborators.

And last but not least, we wish to thank Dr. Tom Ditzinger, Dr. Leontina di Cecco and Mr. Holger Schaepe for their dedication and help to implement and finish this large publication project on time maintaining the highest publication standards.

July 2014

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