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Fuzzy Logic and Soft Computing Applications

11th International Workshop, WILF 2016 Naples, Italy, December 19–21, 2016 Revised Selected Papers

Springer

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Preface

The 11th International Workshop on Fuzzy Logic and Applications, WILF 2016, held in Naples (Italy) during December 19–21, 2016, covered all topics in theoretical, experimental, and application areas of fuzzy, rough, and soft computing in general, with the aim of bringing together researchers from academia and industry to report on the latest advances in their fields of interest. A major objective of WILF in the present rich data era is the presentation of the consolidated results of fuzzy, rough, and soft computing and of their potential applications to the analysis of big data and computer vision tasks and the potential impact on deep learning as mechanisms to capture hidden information from data.

This event represents the pursuance of an established tradition of biannual interdisciplinary meetings. WILF returned to Naples for the third time, after the first edition in 1995, when it was formerly established, and after the edition of 2003 that consolidated the international validity of the workshop. The previous editions of WILF have been held, with an increasing number of participants, in Naples (1995), Bari (1997), Genoa (1999), Milan (2001), Naples (2003), Crema (2005), Camogli (2007), Palermo (2009), Trani (2011), and Genoa (2013). Each event has focused on distinct main thematic areas of fuzzy logic and related applications. From this perspective, one of the main goals of the WILF workshop series is to bring together researchers and developers from both academia and high-tech companies and foster multidisciplinary research.

WILF 2016 certainly achieved the goal. This volume consists of 22 selected peer-reviewed papers, discussed at WILF 2016 as oral contributions. Two invited speakers provided useful links between logic and granular computing and applications:

- Hani Hagras (University of Essex, UK) "General Type-2 Fuzzy Logic Systems For Real World Applications"
- Witold Pedrycz (University of Alberta, Canada) "Algorithmic Developments of Information Granules of Higher Type and Higher Order and Their Applications"

A tutorial by Francesco Masulli in a happy moment of his life gave insight into the role of computational intelligence in big data with an emphasis on health and well-being applications:

- Francesco Masulli (University of Genoa, Italy) "Computational Intelligence and Big Data in Health and Well-Being"

WILF 2016 was also an occasion to fully recognize the achievements of Antonio Di Nola, who, as honorary chair, pointed out how fuzzy logic may be seen as a logic itself:

- Antonio Di Nola (University of Salerno, Italy) "Fuzzy Logic as a Logic"

In addition, awards made available by the Italian Group of Pattern Recognition Researchers (GIRPR), affiliated to the International Association of Pattern Recognition (IAPR), the European Society for Fuzzy Logic and Technology (EUSFLAT), were

handed to PhD students who reported their achievements and research plans in a successful PhD Forum, as well as young researchers who were authors of WILF 2016 papers. All of the award recipients were invited to submit their papers to the *Information Sciences* journal as encouragement of their valuable work in the field.

Thanks are due to the Program Committee members for their commitment to provide high-quality, constructive reviews, to the keynote speakers and the tutorial presenters, and to the local Organizing Committee for the support in the organization of the workshop events. Special thanks to all the CVPRLab staff and specifically Francesco, Alessandro, Mario, Gianmaria, and Vincenzo, for their continuous support and help.

December 2016

Alfredo Petrosino
Vincenzo Loia
Witold Pedrycz

Organization

WILF 2016 was jointly organized by the Department of Science and Technology, University of Naples Parthenope, Italy, the EUSFLAT, European Society for Fuzzy Logic and Technology, the IEEE, Computational Intelligence Society, Italian Chapter, and the GIRPR, Group of Italian Researchers in Pattern Recognition.

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EUSFLAT, European Society for Fuzzy Logic and Technology
GIRPR, Group of Italian Researchers in Pattern Recognition

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