

# **Advances in Intelligent Systems and Computing**

Volume 1000

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Ralph Baker Kearfott · Ildar Batyrshin ·  
Marek Reformat · Martine Ceberio ·  
Vladik Kreinovich  
Editors

# Fuzzy Techniques: Theory and Applications

Proceedings of the 2019 Joint World Congress  
of the International Fuzzy Systems  
Association and the Annual Conference  
of the North American Fuzzy Information  
Processing Society IFSA/NAFIPS'2019  
(Lafayette, Louisiana, USA, June 18–21, 2019)

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ISSN 2194-5357                      ISSN 2194-5365 (electronic)  
Advances in Intelligent Systems and Computing  
ISBN 978-3-030-21919-2              ISBN 978-3-030-21920-8 (eBook)  
<https://doi.org/10.1007/978-3-030-21920-8>

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# Preface

This book contains papers from the 2019 World Congress of the International Fuzzy Systems Association IFSA/NAFIPS'2019, which will be held jointly with the Annual Conference of the North American Fuzzy Information Processing Society in Lafayette, Louisiana, USA, on June 18–21, 2019. These papers cover many interesting and important theoretical issues related to fuzzy techniques, as well as many exciting and successful applications of the fuzzy methodology.

A special section of this book is devoted to papers from the affiliated 12th International Workshop on Constraint Programming and Decision Making CoProd'2019 (Lafayette, Louisiana, June 17, 2019).

Our many thanks to all the authors for their excellent papers, to all the anonymous referees for their important work, to IFSA and NAFIPS leadership, especially to IFSA President Javier Montero, for their support, to Janusz Kacprzyk and to all the Springer staff for helping us to publish this volume, and of course to the readers for their interest—this is for you, the readers, that these books are published. We hope that in this book, you will find new ideas that can be directly applied, as well as ideas and challenges that will inspire you to make further progress.

Thanks again and enjoy!

R. Baker Kearfott  
Ildar Batyrshin  
Marek Reformat  
Martine Ceberio  
Vladik Kreinovich

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