

Preface

Volume XX of the *Transactions on Rough Sets* (TRS) is a continuation of a number of research streams that have grown out of the seminal work of Zdzisław Pawlak¹ during the first decade of the twenty-first century.

The paper co-authored by Javad Rahimipour Anaraki, Saeed Samet, Wolfgang Banzhaf, and Mahdi Eftekhari introduces a new hybrid merit based on a conjunction of correlation feature selection and fuzzy-rough feature selection methods. The new merit selects fewer redundant features and finds the most relevant features resulting in reasonable classification accuracy. The paper co-authored by Mohammad Azad, Mikhail Moshkov, and Beata Zielosko presents a study of a greedy algorithm for construction of approximate decision rules. This algorithm has polynomial time complexity for binary decision tables with many-valued decisions. The proposed greedy algorithm constructs relatively short α -decision rules. The paper by Mani presents algebraic semantics of proto-transitive rough sets. Proto-transitivity, according to the author, can be considered as a possible generalization of transitivity that happens often in the context of applications. The paper by Piero Pagliani presents a uniform approach to previously introduced covering-based approximation operators from the point of view of pointless topology. The monograph authored by Mohammad Aquil Khan is devoted to the study of multiple-source approximation systems, evolving information systems, and corresponding logics based on rough sets.

The editors would like to express their gratitude to the authors of all submitted papers. Special thanks are due to the following reviewers: Jan Bazan, Chris Cornelis, Davide Cuicci, Ivo Düntsch, Soma Dutta, Jouni Järvinen, Richard Jensen, Pradipta Maji, Sheela Ramanna, Zbigniew Suraj, and Marcin Wolski.

The editors and authors of this volume extend their gratitude to Alfred Hofmann, Christine Reiss, and the LNCS staff at Springer for their support in making this volume of TRS possible.

The Editors-in-Chief were supported by the Polish National Science Centre (NCN) grants DEC-2012/05/B/ST6/06981 and DEC-2013/09/B/ST6/01568, the Polish National Centre for Research and Development (NCBiR) DZP/RID-I-44/8/NCBR/2016, as well as the Natural Sciences and Engineering Research Council of Canada (NSERC) discovery grant 185986.

August 2016

James F. Peters
Andrzej Skowron

¹ See, e.g., Pawlak, Z., A Treatise on Rough Sets, *Transactions on Rough Sets* IV, (2006), 1–17. See, also, Pawlak, Z., Skowron, A.: Rudiments of rough sets, *Information Sciences* 177 (2007) 3–27; Pawlak, Z., Skowron, A.: Rough sets: Some extensions, *Information Sciences* 177 (2007) 28–40; Pawlak, Z., Skowron, A.: Rough sets and Boolean reasoning, *Information Sciences* 177 (2007) 41–73.

Transactions on Rough Sets XX

Peters, J.F.; Skowron, A. (Eds.)

2016, VII, 321 p. 16 illus., Softcover

ISBN: 978-3-662-53610-0