

Preface

Volume XVIII 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. This special issue is dedicated to the 2012 Joint Rough Set Symposium (JRS 2012) held in Chengdu, China, during August 17–20, 2012. JRS 2012 is a joint conference comprising the 8th International Conference on Rough Sets and Current Trends in Computing (RSCTC 2012) and the 7th International Conference on Rough Sets and Knowledge Technology (RSKT 2012). After peer review, seven extended papers were accepted for further revision. The papers reflect the current development of rough sets and three-way decisions.

The paper coauthored by You-Hong Xu, Wei-Zhi Wu, and Guoyin Wang investigates topological structures of rough intuitionistic fuzzy sets. The paper coauthored by Jiabin Liu, Fan Min, Hong Zhao, and William Zhu defines feature selection with positive region constraint for test-cost-sensitive data problems and develops a heuristic algorithm to deal with it. The paper coauthored by Singh Kavita, Zaveri Mukesh, and Raghuvanshi Mukesh develops a rough neurocomputing recognition system for illumination invariant face recognition. The paper coauthored by Hengrong Ju, Xibei Yang, Huili Dou, and Jingjing Song presents variable precision multigranulation rough sets and attribute reduction. The paper coauthored by Xiuyi Jia and Lin Shang examines a three-way decisions solution and a two-way decisions solution for filtering spam emails. The paper coauthored by Hong Yu, Ying Wang, and Peng Jiao provides a three-way decisions approach for overlapping clustering based on the decision-theoretic rough set model and develops a density-based overlapping clustering algorithm solving three-way decisions. The paper coauthored by Dun Liu, Tianrui Li, and Decui Liang presents a model of stochastic decision-theoretic rough sets and its properties together with a case study.

The editors of the special issue wish to express their gratitude to Professors James F. Peters and Andrzej Skowron, Editors-in-Chief, for agreeing to publish this special issue and for their guidance during the preparation of this special issue.

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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.

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