

# Preface

The proceedings of the seventh edition of the EWG-DSS Decision Support Systems published in the LNBIP series presents a selection of reviewed and revised papers from the Third International Conference on Decision Support System Technology (ICDSST 2017) held in Namur, Belgium, during May 29–31, 2017, with the main topic “Data, Information and Knowledge Visualization in Decision Making.” This event was organized by the Euro Working Group on Decision Support Systems (EWG-DSS) in collaboration with the University of Namur.

The EWG-DSS series of International Conference on Decision Support System Technology (ICDSST), starting with ICDSST 2015 in Belgrade, were planned to consolidate the tradition of annual events organized by the EWG-DSS in offering a platform for European and international DSS communities, comprising the academic and industrial sectors, to present state-of-the-art DSS research and developments, to discuss current challenges that surround decision-making processes, to exchange ideas about realistic and innovative solutions, and to co-develop potential business opportunities.

The scientific topic areas of ICDSST 2017 include:

- Qualities of Data Visualization
- Data Visualization and Decision Making/Support
- Relational Data Visualization and Decision-Making/Support
- Innovative Data Visualization, Manipulation, and Interaction
- Social and Network Data Visualization
- Textual Data Visualization
- Qualitative Data Visualization
- Process Visualization
- Spatio-temporal Data Visualization and Management
- Environmental Data Visualization
- Visual Information Extraction
- Visual Information Navigation
- Geographic Information Systems and Decision-Making/Support
- Health Information Visualization
- Visualization Supporting Knowledge Extraction
- Big Data Analytics
- Business Intelligence
- Managerial Dashboard
- Knowledge Acquisition and Management
- Knowledge Extraction and Visualization
- Knowledge Communication Through Visualization
- Visualization and Collaborative Decision Making
- Decision Making in Modern Education

In this context, the selected papers are representative of the current and relevant DSS research and application advances. The papers are organized in four sections:

(2) **Visualization Perspectives.** This section gathers propositions for problem-specific visualization, and a study on the use of visualization: “Exploring Visualization for Decision Support in FITradeoff Method and Its Evaluation with Cognitive Neuroscience” by Adiel Teixeira De Almeida and Lucia Reis Peixoto Roselli; “Incorporating Uncertainty into Decision-Making: An Information Visualization Approach” by Mohammad Daradkeh and Bilal Abul Huda; “Process Analytics Through Event Databases: Potentials for Visualizations and Process Mining” by Pavlos Delias and Ioannis Kazanidis; and “Value of Visual Analytics to South African Businesses” by Wisaal Behardien and Mike Hart.

(4) MCDM. Finally, coming to the fundamentals of decision support, two papers on MCDM conclude our proceedings: “Implementation of an Extended Fuzzy VIKOR Method Based on Triangular and Trapezoidal Fuzzy Linguistic Variables and Alternative Deffuzication Techniques” by Nikolaos Ploskas, Jason Papathanasiou, and Georgios Tsaples; and “Integrating System Dynamics with Exploratory MCDA for Robust Decision-Making” by Georgios Tsaples, Jason Papathanasiou, and Nikolaos Ploskas.

We would like to thank many people who contributed greatly to the success of this LNBIP book. First of all, we would like to thank Springer for giving us the opportunity to guest edit the DSS book, and we especially wish to express our sincere gratitude to Ralf Gerstner and Christine Reiss, who provided us with timely professional guidance and advice during the volume editing process. Secondly, we need to thank all the authors for submitting their state-of-the-art work to be considered for this LNBIP volume. All selected papers are of extremely high quality. It was a hard decision for the guest editors to select the best 13. Thirdly, we wish to express our gratitude to the reviewers, who volunteered to help with the selection and improvement of the papers.

Finally, we believe that this EWG-DSS Springer LNBIP volume has made a high-quality selection of well-balanced and interesting research papers addressing the conference main theme. We hope the readers will enjoy the publication!

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