

# Preface

This book is dedicated to Professor Leonard Bolc on the occasion of his 75th birthday, and contains essays written by his friends, former students and colleagues to celebrate his scientific career. For many years Leonard Bolc has played an important role in the Polish computer science community. He was especially known for his clear vision in the development of artificial intelligence, inspiring research, organizational and editorial achievements.

The papers included in this volume, present research in the areas which Leonard Bolc and his colleagues investigated during his long scientific career, i.e., logic, automatic reasoning, natural language processing, and computer applications of natural language or human-like reasoning.

Part I of the book is devoted to logic—the domain which was one of the most explored by Leonard Bolc himself. The first paper in this section describes a new approach to making correct judgments keeping in mind real-world constraints. The second paper addresses the problem of qualitative interpretation of fuzzy-like paraconsistent reasoning with natural language words.

Part II contains papers focusing on different aspects of computational linguistics. This part begins with papers devoted to morphology. Two of them describe morphological aspects of the Polish and Uzbek languages, and the third paper discusses morphological properties of Polish multi-word proper names. The subsequent paper presents a new definition of Polish nominal phrases defined within the metamorphosis grammar formalism, which was first described in one of the numerous publications edited by Professor Bolc. The following four papers are devoted to automatic acquisition of linguistic knowledge: extraction of semantic relations, valence dictionaries, and semantic restrictions on verb arguments.

Part III comprises papers describing different applications in which natural language processing or automatic reasoning plays an important role. The first paper is devoted to speech technology and describes the issues of voice portal implementation. Speech analysis was a subject of interest to Professor Bolc in the mid-1970s, which is commemorated in the following paper. The next two papers are devoted to different aspects of information extraction. The first one presents real-time event extraction, whereas the next one describes the creation of a domain model for information extraction applications in the medical domain. The next topics addressed are methods of searching for exact and approximate patterns in texts, and decision making in the context of a support system that is capable of dynamically adjusting its prediction model. The last paper presents an environment that allows a group of professional analysts to work together on complex problems and exchange their results in active and tacit ways.

By preparing this volume we would like to express our gratitude to our mentor Professor Leonard Bolc, for the many years of his generous and friendly leadership. While preparing this volume we had the unique opportunity to experience the type of work to which Leonard Bolc devoted so much time and effort, and in

which he continues to be very active. We would like to thank all the authors for their positive response to the idea of creating the volume, and for their help in reviewing the papers. We would also like to thank Maciej Korzeniowski for help in proofreading the volume.

We would like to express our thanks for the scientific encouragement Professor Bolc gave us, on behalf of all members of the Linguistic Engineering Group in the Institute of Computer Science, which he organized and led for many years, his former students who were inspired by him to devote their life to scientific research, and also on behalf of those who decided to work in industry. Finally, our colleagues, Piotr Rychlik, Paweł Stefański, Anna Ostaszewska, Agata Wrzos-Kamińska, Jacek Wrzos-Kamiński, Marek Wójcik, Agata Sawicka-Wójcik, and Łukasz Dębowski, who worked in the Group in the space of nearly 25 years, join the authors of the papers included in this volume in wishing Leonard Bolc all the best!

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Małgorzata Marciniak  
Agnieszka Mykowiecka

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