Preface

Oriental Thinking and Fuzzy Logic in Dalian, China, an international conference, was held during August 17–20, 2015, to celebrate the 50th anniversary of Fuzzy Sets. The honorary chair for this conference was Prof. L.A. Zadeh, the founder of fuzzy sets theory, who has guided an information revolution, and constructed a great bridge between qualitative and quantitative.

The conference focused on six main topics as follows: fuzzy information processing; fuzzy engineering; Internet and big data applications; factor space and factorial neural networks; information granulation and granular computing; extension and innovation methods. Here, topic three, the theory of factor space was initiated by Prof. Pei-Zhuang Wang with the oriental thinking. And extension topic six, is a new field of the disciplinary initiated by Prof. Wen Cai, who achieved innovation facing a problem where impossible cases seem to be possible.

There were 15 plenary talks in the conference including Wen Cai, fuzzy logic and extenics; Y.X. Chen, inter-definability and application of fuzzy logic operators; I. Dzitac, fuzzy logic and artificial intelligence; J.L. Feng, theory of meta-synthetic wisdom based on fusion of qualitative, quantitative and imagery operations; J.F. Gu, system science and Chinese medicine; Ouyang He, a mathematical foundation for factor spaces; Qing He, uncertainty learning; C.F. Huang, an approach checking whether an intelligent internet can be improved into intelligence; D.Y. Li, cognitive physics; Z.L. Liu, factorial neural networks; W. Pedrycz, new frontiers of computing and reasoning with qualitative information: a perspective of granular computing; Germano Resconi, from inconsistent topology to consistent in big data; Yong Shi and Y.J. Tian, uncertainty and big databases; P.Z. Wang, fuzzy sets and factor space; Z.S. Xu, complex information decision making. As a special guest, Mr. H.R. Lin, with his 18-year teaching practice in Shanghai Middle School, introduced his book "Preliminary of Fuzzy Mathematics" for pupils in his schools.

Apart from the organized speeches, we much appreciated the articles from individuals with natural interest and deep friendship toward Prof. L. Zadeh. They developed fuzzy theory along probability representation, rough sets, intuitionistic fuzzy sets, nonlinear Particle Swarm Optimization, ranking method to structure

elements and they apply fuzzy theory into recommendation, feature extraction, qualitative mapping, etc. Among all papers presented at the conference, we carefully selected over 60 papers to form this book as assorted appetizers to commemorate the 50th anniversary of fuzzy sets from the Dalian conference.

Finally, we thank the publisher, Springer, for publishing the proceedings as Advance in Intelligent and Soft Computing.

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