

Preface

After the first fifty years from 1965, when Lotfi A. Zadeh published his famous and seminal paper ‘Fuzzy Sets’, an impressive path has been followed for the consolidation of the theories of fuzzy sets and fuzzy logic, as well as for their application to practical problems. In both the theoretical and the applied sides, and mainly in the second, relevant successes have been accomplished. An interesting characteristic shown by the new field, usually known as ‘Fuzzy Logic’, is that its study and practice has been developed in many countries of Europe, Asia, America and Oceania; it can be said that after these fifty years Fuzzy Logic is spread all over the Earth.

It was thanks to Fuzzy Logic that the new field of Soft Computing, in which fuzzy logic has a central role, appeared and developed as a new approach to problems that before the mixing of fuzzy logic with neural nets, genetic algorithms, probabilistic models, etc., could not be satisfactorily posed or solved. Concerning the future of Fuzzy Logic, it seems today that it lies in the new ideas arising from ‘Computing with Words and Perceptions’ (CwW).

Fuzzy logic, Soft computing and CwW were established by Lotfi A. Zadeh, who introduced a good deal of the seminal ideas on which their theoretical and practical development is grounded on. Zadeh, an engineer with a strong personality and of infinite courtesy, is one of the few people in the history of science and technology who, having introduced a new field of research, not only pushed its study and applications, but in his long life personally contemplated them. Today and happily, Zadeh continues seeing how fuzzy logic follows up its strengthening and actual penetration in the welfare of industries and people.

Along the first forty-five years forthcoming 1965, Zadeh traveled through all the continents to explain his new ideas in conferences and meetings. As a consequence of his efforts, many young researchers all over the world were compelled to work in or with fuzzy logic. Thanks to his sweet intellectual form of confronting the adverse opinions that arose from the very beginning of fuzzy set theory, this discipline survived and joined researchers with a nice sense of camaraderie as well as a lack of the typical internal or external academic fights. Fifty years later, there can be no doubt that it was, and it will be thanks to the drive of young researchers that fuzzy

logic can evolve towards the challenging goals posed by CwW in the twenty-first century. Today, when very few people doubt about the importance of fuzziness and on the relevance of its study and applications, new frontiers of knowledge are waiting to be explored. It is for this reason that this book's editors asked their authors to write, from different disciplines and points of view, papers potentially able to motivate young people to devote efforts in the future development of fuzzy logic, fuzzy methodologies, fuzzy applications, etc.

As the editors we thank all authors for their contributions to this volume, for their willingness to write their chapters. We also thank Springer Verlag and in particular Dr. Thomas Ditzinger, Dr. Leontina Di Cecco and Holger Schäpe.

The editors of this book, in their own names and also in those of the authors contributing to it, would like to express their affectionate respect and admiration for Prof. Lotfi A. Zadeh and not only for the man, but also for his work.

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