FOREWORD

The theory of fuzzy sets was initiated in 1965 in the pioneering work of L.A. Zadeh. During the following two decades the theoretical underpinnings of this theory were developed and refined. During the last decade, beginning in about 1985, fuzzy set theory began finding its way into a large number of applications. This is especially true in the area of control where fuzzy logic combined with other soft computing technologies such as neural networks and genetic algorithms have provided a very powerful paradigm. As we enter the last stages of the twentieth century, fuzzy set methods are poised to make even greater contributions to the improved quality of life. With the rapid development of the internet, a medium based upon the confluence of computing and communication technologies, the stage is set for a decade marked by an explosive expansion of an information based culture throughout the world. Here we shall see agents traveling through the internet gatheringinformation and making decisions on behalf of their owners. In order to realize this promise we need methodologies for the intelligent representation and manipulation of information. Fuzzy sets clearly provides a tool that can help in this task.

An important component of this information society are databases, which enable us to store large amounts of information in a structure that provides for easy access through querying. One contribution fuzzy sets is making to database theory is in the area of flexible querying systems. Here we are able to represent questions to databases involving the types of soft concepts human beings use in a form that can be easily implemented in the SQL environment. A significant direction in databases is the development of object-oriented databases. Object-oriented databases allow for a higher order of abstraction in the data model. In this environment we are able to include class type objects and allow specific objects of a class to inherit various properties associated with the classes to which they belong. This volume focuses on an important extension of this object-oriented paradigm which allows for the inclusion of vagueness, imprecision and uncertainty in this paradigm. The editor of this book has gathered papers from the leading researchers in the field of fuzzy object-oriented databases to provide a pioneering volume that will be useful to future

researchers and practitioners as a source of many ideas and paradigms for the inclusion of uncertainty in object-oriented databases. Each of the contributors to this volume is a highly regarded researcher who has made numerous contributions to fuzzy information engineering. The editor of this volume is to be complimented for her efforts to provide a guiding light in this new direction.

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