

Preface

This book covers a new Fuzzy Logic domain—the Type-2 Fuzzy Logic, which has recently received an increasing attention from both academia and industry due to its advantages in handling information uncertainty in computational systems. More particularly, it covers a particular domain related to process modelling and control applications. It provides a new approach for those who seek to use in a single framework the advantages of model-based control algorithms, such as the possibility of developing high-performing closed-loop systems, and the superior model uncertainty manipulation capabilities of Type-2 Fuzzy Logic.

Its contents are presented in a bottom-up approach starting with the introduction of the fundamental concepts of Type-2 Fuzzy Sets, describing how process models can be easily developed according to its principles and, ultimately, integrate them in state-of-the art model-based control algorithms. Throughout the book, theory is complemented with practical applications and reader is invited to take his learning process one one-step forward by implementing his own applications using the book materials.

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Type-2 Fuzzy Logic

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