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 step forward by implementing his own applications using the book materials.

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