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Soggetti	Control engineering System theory Artificial intelligence Computational intelligence Electrical engineering Control and Systems Theory Systems Theory, Control Artificial Intelligence Computational Intelligence Communications Engineering, Networks
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Nota di contenuto	Introduction -- T–S Fuzzy Systems -- Adaptive Control -- T–S Fuzzy System Identification -- Adaptive T–S Fuzzy State Tracking Control Using State Feedback -- Adaptive T–S Fuzzy Output Tracking Control Using State Feedback -- Adaptive T–S Fuzzy Control Using Output Feedback: SISO Case -- Adaptive T–S Fuzzy Control Using Output Feedback: MIMO Case -- Adaptive T–S Fuzzy Control with Unknown Membership Functions -- Adaptive T–S Fuzzy Control Systems For Fault Compensation -- Conclusions.
Sommario/riassunto	This book provides readers with a systematic and unified framework for identification and adaptive control of Takagi–Sugeno (T–S) fuzzy systems. Its design techniques help readers applying these powerful

tools to solve challenging nonlinear control problems. The book embodies a systematic study of fuzzy system identification and control problems, using T–S fuzzy system tools for both function approximation and feedback control of nonlinear systems. Alongside this framework, the book also: introduces basic concepts of fuzzy sets, logic and inference system; discusses important properties of T–S fuzzy systems; develops offline and online identification algorithms for T–S fuzzy systems; investigates the various controller structures and corresponding design conditions for adaptive control of continuous-time T–S fuzzy systems; develops adaptive control algorithms for discrete-time input–output form T–S fuzzy systems with much relaxed design conditions, and discrete-time state-space T–S fuzzy systems; and designs stable parameter-adaptation algorithms for both linearly and nonlinearly parameterized T–S fuzzy systems. The authors address adaptive fault compensation problems for T–S fuzzy systems subject to actuator faults. They cover a broad spectrum of related technical topics and to develop a substantial set of adaptive nonlinear system control tools. Fuzzy System Identification and Adaptive Control helps engineers in the mechanical, electrical and aerospace fields, to solve complex control design problems. The book can be used as a reference for researchers and academics in nonlinear, intelligent, adaptive and fault-tolerant control.

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