



Advanced Fuzzy Logic Technologies in Industrial Applications [

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Springer London,
2006

Monografía

The ability of fuzzy systems to provide shades of gray between "on or off" and "yes or no" is ideally suited to many of today's complex industrial control systems. The static fuzzy systems usually discussed in this context fail to take account of inputs outside a pre-set range and their off-line nature makes tuning complicated. Advanced Fuzzy Logic Technologies in Industrial Applications addresses the problem by introducing a dynamic, on-line fuzzy inference system. In this system membership functions and control rules are not determined until the system is applied and each output of its lookup table is calculated based on current inputs. The tuning process is a major focus in this volume because it is the most difficult stage in fuzzy control application. Using new methods such as μ -law technique, histogram equalization and the Bezier-based method, all detailed here, the tuning process can be significantly simplified and control performance improved. The other great strength of this book lies in the range and contemporaneity of its applications and examples which include: laser tracking and control; robot calibration; image processing and pattern recognition; medical engineering; audio systems; autonomous underwater vehicles and data mining. Advanced Fuzzy Logic Technologies in Industrial Applications is written to be easily understood by readers not having specialized knowledge of fuzzy logic and intelligent control. Design and application engineers and project managers working in control, as well as researchers and graduate students in the discipline will find much to interest them in this work. Advances in Industrial Control aims to report and encourage the transfer of technology in control engineering. The rapid development of control technology has an impact on all areas of the control discipline. The series offers an opportunity for researchers to present an extended exposition of new work in all aspects of industrial control

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Título: Advanced Fuzzy Logic Technologies in Industrial Applications [Recurso electrónico-En línea] edited by Ying Bai, Hanqi Zhuang, Dali Wang

Editorial: London Springer London 2006

Descripción física: XXV, 334 p. 220 illus. Also available online. digital

Tipo Audiovisual: Engineering Artificial intelligence Optical pattern recognition Biomedical engineering Engineering Control Engineering Artificial Intelligence (incl. Robotics) Automation and Robotics Pattern Recognition Automotive and Aerospace Engineering, Traffic Biomedical Engineering

Mención de serie: Advances in Industrial Control 1430-9491

Documento fuente: Springer eBooks

Nota general: Engineering (Springer-11647)

Contenido: From the contents Conventional, Intelligent and Fuzzy Logic Control -- Fundamentals of Fuzzy Logic Control -- Static, Dynamic and Real-time Fuzzy Logic Control and Implementation -- μ -Law Tuning of a Fuzzy Lookup Table -- Design and Tuning of Fuzzy Control Surfaces with Bezier Functions -- Fuzzy Logic Control Applied in a Laser Tracking System -- Fuzzy Logic for Robot Calibrations -- Fuzzy Logic for Image Processing and Pattern Recognition -- Fuzzy Logic For Medical Engineering -- Fuzzy Logic for Transportation Guidance -- Knowledge-base Gear-position Decision for Automatic Vehicles -- Car Navigation and Collision Avoidance System with Fuzzy Logic -- Fuzzy Logic for Autonomous Mobile Robots -- Fuzzy Logic Control for Autonomous Underwater Vehicles -- Fuzzy Logic for Flight Control -- Fuzzy Logic for Audio Systems -- Fuzzy Logic in Data Mining -- Fuzzy Logic Control for Power Networks -- Fuzzy Logic for Servo Control Systems -- Fuzzy Control of Manufacturing Welding Systems -- Fuzzy Predictive Control of a Solar Power Plant

Restricciones de acceso: Accesible sólo para usuarios de la UPV

Tipo recurso electrónico: Recurso a texto completo

Detalles del sistema: Forma de acceso: Web

ISBN: 9781846284694

Autores: Zhuang, Hanqi Wang, Dali

Entidades: SpringerLink (Servicio en línea)

Enlace a formato físico adicional: Printed edition 9781846284687

Punto acceso adicional serie-Título: Advances in Industrial Control 1430-9491

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