

Table of Contents

Preface: George N. Saridis.....ix

Overview: Panos J. Antsaklis and Kevin M. Passino.....xi

Part I: Theory and Architectures

Chapter 1: Introduction to Intelligent Control Systems with High Degrees of Autonomy.....1
Panos J. Antsaklis and Kevin M. Passino

Chapter 2: A Reference Model Architecture for Intelligent Systems Design.....27
James S. Albus

Chapter 3: Model-Based Architecture Concepts for Autonomous Systems Design and Simulation.....57
Bernard P. Zeigler and Sungdo Chi

Chapter 4: Design of Structure-Based Hierarchies for Distributed Intelligent Control.....79
Levent Acar and Umit Ozguner

Chapter 5: Modeling and Design of Distributed Intelligence Systems.....109
Alexander H. Levis

Chapter 6: Nested Hierarchical Control.....129
Alex Meystel

Part II: Design Approaches and Techniques

Chapter 7: Expert Control.....163
Karl J. Astrom and Karl-Erik Arzen

Chapter 8: Modeling and Analysis of Artificially Intelligent Planning Systems.....191
Kevin M. Passino and Panos J. Antsaklis

Chapter 9: Fuzzy and Neural Control.....215
Hamid R. Berenji

Chapter 10: Learning Control Systems.....237
Jay Farrell and Walter Baker

Chapter 11: Learning Control: Methods, Needs and Architectures.....263
Mieczyslaw M. Kokar

Chapter 12: Learning in Control.....283
Edward Grant

Part III: Applications

Chapter 13: Intelligent Robot Prehension.....319
Thang N. Nguyen and Harry Stpehanou

Chapter 14: Modeling of MultiSensory Robotic Systems with Failure Diagnostic Capabilities.....349
Guna Seetharaman and Kimon P. Valavanis

Chapter 15: AUTOCREW: A Paradigm for Intelligent Flight Control.....371
Brenda L. Belkin and Robert F. Stengel

Chapter 16: A Framework for Knowledge-Based Diagnosis in Process Operations.....401
P.R. Prasad and James F. Davis

Index423