

1. Record Nr.	UNINA9910483166003321
Titolo	New Trends in Robot Control // edited by Jawhar Ghommam, Nabil Derbel, Quanmin Zhu
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2020
ISBN	981-15-1819-X
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (382 pages)
Collana	Studies in Systems, Decision and Control, , 2198-4190 ; ; 270
Disciplina	629.892
Soggetti	Control engineering Robotics Automation Multibody systems Vibration Mechanics, Applied Engineering mathematics Engineering—Data processing System theory Mathematics Control, Robotics, Automation Control and Systems Theory Multibody Systems and Mechanical Vibrations Mathematical and Computational Engineering Applications Complex Systems Applications of Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Robust and adaptive state estimation of UAV quadrotors with a high gain approach -- Autonomous Trenchless Horizontal Directional Drilling -- Intelligent control for an uncertain mobile robot with external disturbances estimator -- Optimal lane merging for AGV -- ENMPC vs PID control strategies applied to a quadcopter -- Stabilization of Second Order Underactuated System Using Fast

Terminal Synergetic Control -- Dynamic Modeling of a Quadrotor UAV prototype -- Finite Time Consensus for Higher Order Multi Agent Systems with Mismatched Uncertainties -- Compound Fractional Integral Terminal Sliding Mode Control and Fractional PD Control of a MEMS Gyroscope -- Model-Based Fault Detection of Permanent Magnet Synchronous Motors of Drones Using Current Sensors -- Flexible-link Manipulators: Dynamic Behavior Analysis and Advanced Nonlinear Control Strategies -- L1 Adaptive Control for Lower Limb Exoskeletons Used to Kids' Rehabilitation -- Path planning for a multi-robot system with decentralized control architecture -- Tuning of fractional order controller and prefilter in MIMO robust motion control: SCARA robot -- Nonholonomic Mobile Robots -- Exoskeletons Control via Computed Torque For Lower Limb Rehabilitation -- Sliding Mode Fault Diagnosis with Vision in the Loop for Robot Manipulators.

Sommario/riassunto

This book presents solutions to control problems in a number of robotic systems and provides a wealth of worked-out examples with full analytical and numerical details, graphically illustrated to aid in reader comprehension. It also presents relevant studies on and applications of robotic system control approaches, as well as the latest findings from interdisciplinary theoretical studies. Featuring chapters on advanced control (fuzzy, neural, backstepping, sliding mode, adaptive, predictive, diagnosis, and fault-tolerant control), the book will equip readers to easily tailor the techniques to their own applications. Accordingly, it offers a valuable resource for researchers, engineers, and students in the field of robotic systems.
