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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Mathematical Preliminaries -- Modeling of the MWIP System -- Path Planning and Motion Generation -- Linear Control Methods -- Nonlinear Control Methods -- Model-reference Adaptive Control -- Model-free Intelligent Control -- Learning Impedance Control -- Conclusions and Perspectives.
Sommario/riassunto	Advanced Control of Wheeled Inverted Pendulum Systems is an orderly presentation of recent ideas for overcoming the complications inherent in the control of wheeled inverted pendulum (WIP) systems, in the presence of uncertain dynamics, nonholonomic kinematic constraints as well as underactuated configurations. The text leads the reader in a theoretical exploration of problems in kinematicsdynamics modeling, advanced control design techniques,and trajectory generation for WIPs. An important concern is how to deal with various uncertainties associated with the nominal model, WIPs being characterized by unstable balance and unmodelled dynamics and being subject to time-varying external disturbances for which accurate models are hard to come by. The book is self-contained, supplying the reader with

everything from mathematical preliminaries and the basic Lagrange-Euler-based derivation of dynamics equations to various advanced motion control and force control approaches as well as trajectory generation method. Although primarily intended for researchers in robotic control, Advanced Control of Wheeled Inverted Pendulum Systems will also be useful reading for graduate students studying nonlinear systems more generally. .