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Descrizione fisica	1 online resource (xxi, 167 pages) : illustrations
Collana	Studies in systems, decision and control, , 2198-4190 ; ; volume 494
Disciplina	629.8
Soggetti	Motor vehicles - Dynamics Sliding mode control Artificial intelligence - Engineering applications Human-computer interaction Intelligent transportation systems Automation Artificial intelligence Control, Robotics, Automation Artificial Intelligence
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Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Overview of Vehicle Dynamics and Control -- PID Control Approaches -- Linear Quadratic Regulator (LQR) -- Sliding Mode Control in Vehicle Dynamics -- Human-Centric Considerations in Vehicle Control.
Sommario/riassunto	This book approaches its subject matter by merging advanced AI techniques with traditional vehicle dynamics control. It emphasizes human-centric design to improve safety, comfort, and personalization in automotive systems like active front steering (AFS) and electronic stability control (ESC). What’s new is its focus on human-centric AI, integrating adaptive systems that anticipate driver intent and balance automation with user engagement. The book spans from basic vehicle dynamics to AI-powered methods, targeting engineers, researchers, and students. It’s key for designing, testing, and optimizing control

systems while addressing future challenges in autonomous and connected vehicles.