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Altri autori (Persone)	KukkalaVipin Kumar PasrichaSudeep
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Nota di contenuto	Chapter 1 Reliable Real-time Message Scheduling in Automotive Cyber-Physical Systems -- Chapter 2 Evolvement of Scheduling Theories for Autonomous Vehicles -- Chapter 3 Distributed Coordination and Centralized Scheduling for Automobiles at Intersections -- Chapter 4 Security Aware Design of Time-Critical Automotive Cyber-Physical Systems -- Chapter 5 Secure by Design Autonomous Emergency Braking Systems in Accordance with ISO 21434 -- Chapter 6 Resource Aware Synthesis of Automotive Security Primitives -- Chapter 7 Gradient-free Adversarial Attacks on 3D Point Clouds from LiDAR Sensors -- Chapter 8 Internet of Vehicles- Security and Research Road map -- Chapter 9 Protecting Automotive Controller Area Network: A Review on Intrusion Detection Methods Using Machine Learning Algorithms -- Chapter 10 Real-Time Intrusion Detection in Automotive Cyber-Physical Systems with Recurrent Autoencoders -- Chapter 11 Stacked LSTMs based Anomaly Detection in Time-Critical Automotive

Networks -- Chapter 12 Deep AI for Anomaly Detection in Automotive Cyber-Physical Systems -- Chapter 13 Physical Layer Intrusion Detection and Localization on CAN bus -- Chapter 14 Spatiotemporal Information based Intrusion Detection Systems for In-vehicle Networks -- Chapter 15 In-Vehicle ECU Identification and Intrusion Detection from Electrical Signaling -- Chapter 16 Machine Learning for Security Resiliency in Connected Vehicle Applications -- Chapter 17 Object Detection in Autonomous Cyber-Physical Vehicle Platforms: Status and Open Challenges -- Chapter 18 Scene-Graph Embedding for Robust Autonomous Vehicle Perception -- Chapter 19 Sensing Optimization in Automotive Platforms -- Chapter 20 Unsupervised Random Forest Learning for Traffic Scenario Categorization -- Chapter 21 Development of Computer Vision Models for Drivable Region Detection in Snow Occluded Lane Lines.-Chapter 22 Machine Learning Based Perception Architecture Design for Semi-Autonomous Vehicles -- Chapter 23 -- Predictive Control During Acceleration Events to Improve Fuel Economy -- Chapter 24 Learning-based social coordination to improve safety and robustness of cooperative autonomous vehicles in mixed traffic -- Chapter 25 Evaluation of Autonomous Vehicle Control Strategies Using Resilience Engineering -- Chapter 26 Safety-assured Design and Adaptation of Connected and Autonomous Vehicles -- Chapter 27 Identifying and Assessing Research Gaps for Energy Efficient Control of Electrified Autonomous Vehicle Eco-driving.

Sommario/riassunto

This book provides comprehensive coverage of various solutions that address issues related to real-time performance, security, and robustness in emerging automotive platforms. The authors discuss recent advances towards the goal of enabling reliable, secure, and robust, time-critical automotive cyber-physical systems, using advanced optimization and machine learning techniques. The focus is on presenting state-of-the-art solutions to various challenges including real-time data scheduling, secure communication within and outside the vehicle, tolerance to faults, optimizing the use of resource-constrained automotive ECUs, intrusion detection, and developing robust perception and control techniques for increasingly autonomous vehicles. The book describes state-of-the-art solutions to design secure, robust, and time-critical automotive systems; Various approaches are discussed that will impact the design of emerging autonomous vehicle systems; The content is relevant to researchers and industry practitioners interested in future automotive platforms. .