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Autore	Arshi Oroos
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Altri autori (Persone)	KhanInam Ullah KaushikKeshav IqbalNadeem UllahInam SlimaniKhadija
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Applications in UAV Swarm Security -- Chapter 18: 5G Integration for Enhanced UAV Swarm Connectivity -- Chapter 19: Augmented Reality (AR) and Virtual Reality (VR) for UAV Swarm Visualization -- Chapter 20: Innovations and Future Directions in UAV Swarm for Protecting Smart Cities.

Sommario/riassunto

Explore the intersection between unmanned aerial vehicles (UAVs) and the evolving landscape of smart cities. With the increasing integration of technology into urban environments, there is a growing need to understand how UAV swarms can contribute to the safety, efficiency, and resilience of these complex urban ecosystems. The book aims to provide a technical understanding of UAV swarms and their applications within the context of smart cities. It begins by laying the groundwork with an introduction to UAV swarms and smart cities, establishing the foundational concepts and motivations behind their integration. As the book progresses, it delves into various aspects of smart cities, exploring concepts, technologies, and challenges inherent in their development and operation. This includes discussions on cloud computing, cybersecurity, machine learning applications, surveillance and monitoring systems, urban planning, and infrastructure management. It also examines the integration of IoT devices with UAV swarms, highlighting the synergies between these emerging technologies and their potential impact on urban environments. The book examines cutting-edge topics such as edge computing, blockchain applications, 5G integration, and augmented reality/virtual reality (AR/VR) visualization techniques in the context of UAV swarm operations. It concludes with reflections on innovations and future directions, offering insights into the evolving landscape of UAV swarm technologies and their implications for the protection and advancement of smart cities. The book serves as a comprehensive guide for researchers, practitioners, and policymakers interested in understanding the technical, social, and economic dimensions of UAV swarm technology within the context of smart city development and management.
