

1. Record Nr.	UNINA9910993985803321
Autore	Grubesic Tony H
Titolo	UAVs for Spatial Modelling and Urban Informatics / / by Tony H. Grubesic, Jake R. Nelson, Ran Wei
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2024
ISBN	9783031541148 3031541146
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (XII, 170 p. 1 illus.)
Disciplina	910.285
Soggetti	Geographic information systems Medical informatics Geography Application software Geographical Information System Health Informatics Computer and Information Systems Applications
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1: An Overview of UAVs for Spatial Modeling and Urban Informatics -- Chapter 2: UAV Operating Environments -- Chapter 3: UAVs for monitoring property code violations -- Chapter 4: Unmasking Invisible Infrastructure Systems with UAVs -- Chapter 5: Maximizing the Thermal Comfort of Pedestrians with UAV Imagery and Multiobjective Spatial Optimization -- Chapter 6: Evaluating Rooftop Solar Energy Inequity with UAVs -- Chapter 7: UAVs for Rapid Storm Damage Assessment -- Chapter 8: Identifying Critical Micro-infrastructures -- Chapter 9: Drones and Their Future.
Sommario/riassunto	This book aims to provide a wide range of real-world applications in using unmanned aerial vehicles (UAVs) for geographic observation, spatial modeling, and urban informatics. Specifically, UAVs are incredibly effective platforms for connecting people, places, and technology. This book explores the utility of UAVs for monitoring, measuring, and improving urban infrastructure systems, urban

sustainability, and the urban environment. The dynamism of cities provides opportunities for economic, social, and environmental change, but benchmarking and measuring cities continues to be challenging. This challenge is due, at least in part, to a lack of monitoring systems that can collect and analyze data at a granular enough scale to capture the nuance of local phenomena. UAVs offer a promising mechanism to fill this niche, serving as a measurement platform that can rapidly and inexpensively collect data and monitor change in cities. However, their use is fraught with social, operational, regulatory, and technical challenges for successful deployments. This book provides a resource for urbanists (e.g., planners, geographers, sociologists, epidemiologists, engineers), educators, and students who work with geographic information and seek to enhance these data using data and information from unmanned aerial vehicles. At the same time, we provide operational and methodological frameworks for carrying out these advanced analyses in a manner that considers the challenges of incorporating UAVs in research within the urban environment. We provide six unique applications of UAVs for urban analysis, detailing relevant policy and empirical questions, UAV mission parameters, data collection, spatial modeling, and the associated empirical results. Further, we discuss how best to integrate these results into actionable geospatial intelligence and policy development to improve city infrastructure systems, sustainability, the environment, and neighborhood quality.
