

1. Record Nr.	UNINA9911016069803321
Autore	Qaisar Muhammad Umar Farooq
Titolo	Empowering IoT: Reliability, Network Management, Sensing, and Probabilistic Charging in Wireless Sensor Networks : A Comprehensive Guide to IoT-Based WSN Network Optimization // by Muhammad Umar Farooq Qaisar, Weijie Yuan, Paolo Bellavista, Hina Tabassum
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2025
ISBN	981-9660-79-3
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (277 pages)
Altri autori (Persone)	YuanJeffrey W (Jeffrey Weijie) BellavistaPaolo TabassumHina
Disciplina	004.678
Soggetti	Internet of things Wireless communication systems Mobile communication systems Internet of Things Wireless and Mobile Communication
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- IoT and Wireless Sensor Networks (WSNs) -- Wireless Sensor Networks Empowered by SDN: Reliable and Resilient Communication -- Securing Sensor Routes: Trustworthy and Load-Balanced Strategies -- Navigating the Energy Spectrum: Probabilistic Cluster Routing for Efficiency -- Revolutionizing IoT Sensor Charging: The ISAC-Probabilistic Paradigm -- Summary and Future Perspective.
Sommario/riassunto	This book provides a comprehensive exploration of both fundamental principles and practical engineering techniques. It places a strong emphasis on several key areas, including load balancing for IoT sensor devices through effective network management to ensure robust communication reliability among these sensor devices. It also delves into the intricacies of efficient charging scheduling for sensor devices, using probabilistic approaches and integrated sensing and communication technologies to enhance network optimization. Central to the book's goals is its comprehensive and systematic treatment of

practical challenges in IoT network optimization. This focus makes it particularly suitable for readers seeking practical solutions in this area. The book's target audience includes researchers, engineers, graduate students, and IoT industry professionals interested in areas such as reliability improvement, load balancing, charging scheduling, and network management. By providing both theoretical foundations and practical insights, this book serves as a valuable resource for those seeking to navigate the complexities of IoT network optimization.
