Wireless Communications and Networking for Unmanned Aerial Vehicles

A thorough treatment of UAV wireless communications and networking research challenges and opportunities. Detailed, step-by-step development of carefully selected research problems that pertain to UAV network performance analysis and optimization, physical layer design, trajectory and path planning, resource management, multiple access, cooperative communications, standardization, control, and security is provided. Featuring discussion of practical applications including drone delivery systems, public safety, IoT, virtual reality, and smart cities, this is an essential tool for researchers, students, and engineers interested in broadening their knowledge of the deployment and operation of communication systems that integrate or rely on unmanned aerial vehicles.

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"This book, written by the most prominent experts in the field, provides a complete in-depth analysis of UAV wireless communications. It should become a reference material for all the students, engineers, and researchers who are building our next-generation wireless communication networks."

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"This is the most comprehensive book on the rapidly evolving field of wireless communications and networking for UAVs. The authors are among the researchers who have made the most profound contributions to this emerging field. Their impressive command of the subject matter results in a thorough presentation taking theory, practice, and industrial standards into account. A must-read for researchers and engineers working in this field."

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Walid Saad:
To Mary, Karim, Raphael, and everyone who believes the sky is not the limit

Mehdi Bennis:
To my beloved family

Mohammad Mozaffari:
To my family

Xingqin Lin:
This book is dedicated to my grandfather and father, Zuojiao Lin and Yuluan Lin, with love

Contents

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