Algorithms and Protocols for Wireless and Mobile Ad Hoc Networks

Azzedine Boukerche (Editor)

E-Book	978-0-470-39637-7	November 2008	**$130.99**
Hardcover	978-0-470-38358-2	November 2008	**$163.25**
O-Book	978-0-470-39638-4	March 2008	**Available on Wiley Online Library**

📖 DESCRIPTION

Learn the fundamental algorithms and protocols for wireless and mobile ad hoc networks

Advances in wireless networking and mobile communication technologies, coupled with the proliferation of portable computers, have led to development efforts for wireless and mobile ad hoc networks. This book focuses on several aspects of wireless ad hoc networks, particularly algorithmic methods and distributed computing with mobility and computation capabilities. It covers everything readers need to build a foundation for the design of future mobile ad hoc networks:

• Establishing an efficient communication infrastructure

• Robustness control for network-wide broadcast

• The taxonomy of routing algorithms

• Adaptive backbone multicast routing

• The effect of inference on routing

• Routing protocols in intermittently connected mobile ad hoc networks and delay tolerant networks

• Transport layer protocols

• ACK-thinning techniques for TCP in MANETs

• Power control protocols

• Power saving in solar powered WLAN mesh networks

• Reputation and trust-based systems

• Vehicular ad hoc networks

• Cluster interconnection in 802.15.4 beacon enabled networks

The book is complemented with a set of exercises that challenge readers to test their understanding of the material. *Algorithms and Protocols for Wireless and Mobile Ad Hoc Networks* is appropriate as a self-study guide for electrical engineers, computer engineers, network engineers, and computer science specialists. It also serves as a valuable supplemental textbook in computer science, electrical engineering, and network engineering courses at the advanced undergraduate and graduate levels.

ABOUT THE AUTHOR

Azzedine Boukerche, PhD, is a Full Professor and holds a Canada Research Chair position in wireless networking and mobile computing at the University of Ottawa, Canada. He is the Founding Director of PARADISE Research Laboratory, also at the University of Ottawa. Dr. Boukerche has published numerous papers in the fields of wireless networks, mobile and pervasive computing, and wireless ad hoc and sensor networks. He is an associate editor of several international journals. In addition, he has contributed as general chair and program chair to many IEEE and ACM international conferences in the areas of wireless communication and mobile computing, wireless ad hoc, and sensor and mesh networking. He is the recipient of several research awards for his work in the field of wireless and mobile networking.

SERIES

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