

Tag Counting and Monitoring in Large-Scale RFID Systems: Theoretical Foundations and Algorithm Design

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Abstrak

This book provides a comprehensive treatment of the theoretical foundation and algorithmic tools necessary in the design of efficient tag counting and monitoring algorithms in emerging RFID systems. The book delivers an in-depth analysis on the following problems ranging from theoretical modeling and analysis, to practical algorithm design and optimization: Stability analysis of the frame slotted Aloha protocol, the de facto standard in RFID tag counting and identification; Tag population estimation in dynamic RFID systems; Missing tag event detection in the presence of unexpected tags; Missing tag event detection in multi-group multi-region RFID systems. The target readers are researchers and advanced-level engineering students interested in acquiring in-depth knowledge on the topic and on RFID systems and their applications.