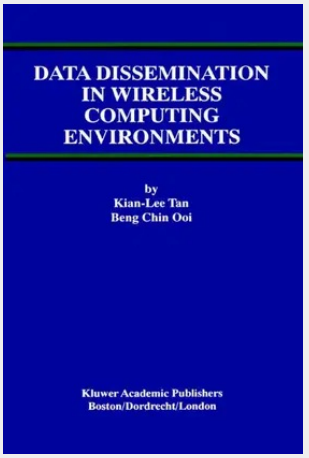
Humana

Data Dissemination in Wireless Computing Environments



In our increasingly mobile world the ability to access information on demand at any time and place can satisfy people's information needs as well as confer on them a competitive advantage. The emergence of battery-operated, low-cost and portable computers such as palmtops and PDAs, coupled with the availability and exploitation of wireless networks, have made possible the potential for ubiquitous computing. Through the wireless networks, portable equipments will become an integrated part of existing distributed computing environments, and mobile users can have access to data stored at information servers located at the static portion of the network even while they are on the move. Traditionally, information is retrieved following a request-response model. However, this model is no longer adequate in a wireless computing environment. First, the wireless channel is unreliable and the bandwidth is low compared to the wired counterpart. Second, the environment is essentially asymmetric with a large number of mobile users accessing a small number of servers. Third, battery-operated portable devices can typically operate only for a short time because of the short battery lifespan. Thus, clients are expected to be disconnected most of the time.
To overcome these limitations, there has been a proliferation of research efforts on designing data delivery mechanisms to support wireless computing more effectively. focuses on such mechanisms. The purpose is to provide a thorough and comprehensive review of recent advances on energy-efficient data delivery protocols, efficient wireless channel bandwidth utilization, reliable broadcasting and cache invalidation strategies for clients with long disconnection time. Besides surveying existing methods, this book also compares and evaluates some of the more promising schemes.

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160,49 €
149,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780792378662
Medium: Buch
ISBN: 978-0-7923-7866-2
Verlag: Humana
Erscheinungstermin: 30.06.2000
Sprache(n): Englisch
Auflage: 2000
Serie: Advances in Database Systems
Produktform: Gebunden
Gewicht: 453 g
Seiten: 169
Format (B x H): 160 x 241 mm