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| Soggetti                | Data structures (Computer science)<br>Information theory<br>Computer networks<br>Computers, Special purpose<br>Software engineering<br>Operating systems (Computers)<br>Application software<br>Data Structures and Information Theory<br>Computer Communication Networks<br>Special Purpose and Application-Based Systems<br>Software Engineering<br>Operating Systems<br>Computer and Information Systems Applications |
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| Nota di bibliografia    | Includes bibliographical references at the end of each chapters and index.   |
| Nota di contenuto       | Storage Management -- Storing and Accessing User Context -- Cooperative Caching in Ad Hoc Networks -- Investigation of Cache Maintenance Strategies for Multi-cell Environments -- Resilient Data-Centric Storage in Wireless Ad-Hoc Sensor Networks -- Location Tracking -- Shape-Based Similarity Query for Trajectory of Mobile Objects -- An Efficient Spatiotemporal Indexing Method for Moving                     |

Objects in Mobile Communication Environments -- DynaMark: A Benchmark for Dynamic Spatial Indexing -- Information Management -- Using Separate Processing for Read-Only Transactions in Mobile Environment -- Publish/Subscribe Tree Construction in Wireless Ad-Hoc Networks -- Personal Workflows: Modeling and Management -- Location-Aware Services -- Architectural Support for Global Smart Spaces -- FATES: Finding A Time dEpendent Shortest path -- Search K Nearest Neighbors on Air -- Adaptive Location Management in Mobile Environments -- Context-Aware Services -- Policy-Driven Binding to Information Resources in Mobility-Enabled Scenarios -- Constructing Environment-Aware Mobile Applications Adaptive to Small, Networked Appliances in Ubiquitous Computing Environment -- Experiences in Using CC/PP in Context-Aware Systems -- Document Visualization on Small Displays -- Resource Discovery -- Towards Autonomous Services for Smart Mobile Devices -- Nomad: Application Participation in a Global Location Service -- Mobiscope: A Scalable Spatial Discovery Service for Mobile Network Resources -- Location Management -- Presence, Location, and Instant Messaging in a Context-Aware Application Framework -- CAMEL: A Moving Object Database Approach for Intelligent Location Aware Services -- Using Hashing and Caching for Location Management in Wireless Mobile Systems -- SEB-tree: An Approach to Index Continuously Moving Objects -- Best Movement of Mobile Agent in Mobile Computing Systems -- Storage Management and Query Processing -- Clique: A Transparent, Peer-to-Peer Replicated File System -- Transactional Peer-to-Peer Information Processing: The AMOR Approach -- Performance Evaluation of Transcoding-Enabled Streaming Media Caching System -- Adaptive File Cache Management for Mobile Computing -- Adaptive Power-Aware Prefetching Schemes for Mobile Broadcast Environments -- A Multi-layered Database Model for Mobile Environment -- Context-Aware Information Services -- A Task Oriented Approach to Delivery in Mobile Environments -- Picturing the Future Personal Navigation Products and Services by Means of Scenarios -- Personal Digest System for Professional Baseball Programs in Mobile Environment -- Handling Client Mobility and Intermittent Connectivity in Mobile Web Accesses -- Enabling Web-Based Location-Dependent Information Services in Mobile Environments.

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## Sommario/riassunto

We are rapidly heading towards a world in which the computing infrastructure will contain billions of devices, which will interact with other computing/communications devices that are carried or worn by users as they go through their daily routines. Such devices will provide data access to mobile users as they move within buildings, cities, or across the globe. This new infrastructure presents tremendous challenges for data management technology, including: huge scale; variable and intermittent connectivity; location and context-aware applications; bandwidth, power, and device size limitations; and multimedia data delivery across hybrid networks and systems. Traditional data management technologies such as query processing, transaction management, workflow, business process management, and metadata management must all be reevaluated in this emerging environment. Furthermore, nontraditional issues such as the semantics of mobile data, location-dependent querying, broadcast and multicast delivery, and caching/prefetching techniques must all be addressed. The ability to track people as they move about their daily tasks raises serious issues of security and privacy. This conference is the fourth in the Mobile Data Management series, focusing on the challenges and opportunities for the management of data in mobile, pervasive, and wearable computing. MDM 2000 and 2001 were in Hong Kong and

MDM 2002 was in Singapore. Eighty-seven papers were submitted to the conference from 23 countries and were subject to a rigorous review procedure. Every paper had three or four independent reviews. Twenty-one full papers and 15 short papers from both academia and industry were selected for publication in this volume of proceedings.

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