

Urban Computing

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Computing and Communication Systems in Urban Development

A Detailed Perspective

 Springer

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Preface

Advanced computing and communication system issues are characteristically on different disciplines, necessitating that every solution needs to be balanced between social demands, community issues, and economic constraints. System issues are separated in compound scales in extreme dynamics with intense uncertainty level. Intelligent computing methodologies enhance the formulation of optimum procedures for sustainability; however, dynamic, uncertain, and multiscale aspects present fundamental computation concerns. Considering the advancements of information systems, researchers have considered the relevance of enhancing accuracy and efficiency of contemporary data dispensation systems. In reference to past developments, there is tremendous growth in the Internet of Things (IoT), sensory networks, big data, cloud computation, and mobile computing that deliver both temporal and spatial solutions and opportunities to information handling methods. The book on advanced computing and communication systems presents the most recent challenges and developments in sustainable urban computing systems with the objective of promoting awareness and best practices for the real world. It aims to present new directions for further research and technology improvements in this important area.

An urban computing offers progressed and enhanced living style to the people. Urban areas represented a business-oriented and appealing environment for the people. In urban settings, people are benefited with different amenities, like PC, tablet, cell phones, Global Positioning Systems (GPS), and sensors. The urban area estimates are to be evaluated at many billion dollars by 2020. This market covers various areas including smart management, smart movements, smart surveillance, smart transportation, smart homes, smart industry, and smart situation handlings.

This book covers ideas, methods, algorithms, and tools for the in-depth study of performance and reliability of computing and communication systems in urban development. The field of urban development is moving toward a trending research domain by comprising several areas of computer science and electrical and other engineering disciplines. The scope of computing and communication systems is to explore and contribute numerous research contributions relating to the field of computing, network specifications, mobility, web intelligence, biomedical informatics,

e-health, social relationship, and energy- and security-aware management system in urban development.

In this book, we express the techniques and detailed perspective of computing and communication systems that can be used in overcoming and solving complex tasks in urban development. This book is based on various research horizons and contributions focusing on computing and communication system challenges over:

- Mechanism of mobile and pervasive computing and its efficiency in urban development compared to traditional distributed techniques
- Web intelligence and data mining in smart city applications and services
- Focus on exploring the signal processing architectures, algorithms, and human machine interactions in urban applications
- Analyzing the efficiency of biomedical informatics and computation in urban e-health
- Advancements in performing artificial intelligence and machine learning for future urban development
- Utilization of grid and cloud computing in urban information systems
- Discovering various services of social relationship ranking on the smart Internet
- Methodologies for performing cognitive radio communication and applications for urban spaces
- Exploring the basics of machine learning and big data for smart generation
- Significance of smart sensor networking and green technologies in urban areas
- Distributed algorithms for energy efficient network selection for urban cognitive spectrum handovers

This book opens the door for authors toward current research in computing and communication systems for urban development.

We would like to thank Mr. Jorge Nakahara Jr., Editor, *Computer Science*, Springer, and Mr. Rahul Sharma, Project Coordinator (Books), Springer Nature and Springer International Publishing AG, for their great support.

We anticipate that this book will open new entrance for further research and technology improvements. All the chapters provide a complete overview of Intelligent Computing and Communication Systems. This book will be handy for academicians, research scholars, and graduate students in engineering discipline.

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