



Shui Yu, Song Guo (Eds.)

# Big Data Concepts, Theories, and Applications

- Covers multiple disciplines on Big Data
- Offers theoretical and technical content for readers in both academia and industry
- Presents Big Data framework, architectures, mechanisms, implementations and techniques for the extension of existing platforms (e.g., the cloud)

This book covers three major parts of Big Data: concepts, theories and applications. Written by world-renowned leaders in Big Data, this book explores the problems, possible solutions and directions for Big Data in research and practice. It also focuses on high level concepts such as definitions of Big Data from different angles; surveys in research and applications; and existing tools, mechanisms, and systems in practice. Each chapter is independent from the other chapters, allowing users to read any chapter directly. After examining the practical side of Big Data, this book presents theoretical perspectives. The theoretical research ranges from Big Data representation, modeling and topology to distribution and dimension reducing. Chapters also investigate the many disciplines that involve Big Data, such as statistics, data mining, machine learning, networking, algorithms, security and differential geometry. The last section of this book introduces Big Data applications from different communities, such as business, engineering and science. Big Data Concepts, Theories and Applications is designed as a reference for researchers and advanced level students in computer science, electrical engineering and mathematics. Practitioners who focus on information systems, big data, data mining, business analysis and other related fields will also find this material valuable.

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