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Edward Y. Chang

Foundations of Large-Scale Multimedia Information Management and Retrieval

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"Foundations of Large-Scale Multimedia Information Management and Retrieval: Mathematics of Perception" covers knowledge representation and semantic analysis of multimedia data and scalability in signal extraction, data mining, and indexing. The book is divided into two parts: Part I - Knowledge Representation and Semantic Analysis focuses on the key components of mathematics of perception as it applies to data management and retrieval. These include feature selection/reduction, knowledge representation, semantic analysis, distance function formulation for measuring similarity, and multimodal fusion. Part II - Scalability Issues presents indexing and distributed methods for scaling up these components for high-dimensional data and Web-scale datasets. The book presents some real-world applications and remarks on future research and development directions. The book is designed for researchers, graduate students, and practitioners in the fields of Computer Vision, Machine Learning, Large-scale Data Mining, Database, and Multimedia Information Retrieval. Dr. Edward Y. Chang was a professor at the Department of Electrical & Computer Engineering, University of California at Santa Barbara, before he joined Google as a research director in 2006. Dr. Chang received his M.S. degree in Computer Science and Ph.

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