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	Sommario/riassunto	This book presents the state of the art in distributed machine learning algorithms that are based on gradient optimization methods. In the big data era, large-scale datasets pose enormous challenges for the existing machine learning systems. As such, implementing machine learning algorithms in a distributed environment has become a key technology, and recent research has shown gradient-based iterative optimization to be an effective solution. Focusing on methods that can speed up large-scale gradient optimization through both algorithm optimizations and careful system implementations, the book introduces three essential techniques in designing a gradient optimization algorithm to train a distributed machine learning model: parallel strategy, data compression and synchronization protocol. Written in a tutorial style, it covers a range of topics, from fundamental knowledge to a number of carefully designed algorithms and systems of

distributed machine learning. It will appeal to a broad audience in the field of machine learning, artificial intelligence, big data and database management.