

Cui, Shuguang and Hero III, Alfred O. and Luo, Zhi-Quan and Moura, José M. F. *Big Data over Networks*. Cambridge CB2 8BS, United Kingdom: Cambridge University Press, 2016, 438 pp. \$89.99 (Hardbound).

Utilizing both key mathematical tools and state-of-the-art research results, this text explores the principles underpinning large-scale information processing over networks and examines the crucial interaction between big data and its associated communication, social, and biological networks.

Written by experts in the diverse fields of machine learning, optimization, statistics, signal processing, networking, communications, sociology, and biology, this book employs two complementary approaches: first, analyzing how the underlying network constrains the upper layer of collaborative big data processing, and second, examining how big data processing may boost performance in various networks. Unifying the broad scope of the book is the rigorous mathematical treatment of the subjects, which is enriched by in-depth discussion of future directions and numerous open-ended problems that conclude each chapter.

Readers will be able to master the fundamental principles for dealing with big data over large systems, making it essential reading for graduate students, scientific researchers, and industry practitioners alike.

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