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Nota di contenuto	List of Contributors -- About the Guest Editors -- Preface -- From Information Theory to Geometric Science of Information -- Chapter 1: Origins of Entropy and Information Theory -- On Shannon's Formula and Hartley's Rule: Beyond the Mathematical Coincidence -- Chapter 2: Mathematical and Physical Foundations of Information and Entropy Geometric Structures -- Symmetry, Probabiliy, Entropy: Synopsis of the Lecture at MAXENT 2014 -- The Homological Nature of Entropy -- Computing Bi-Invariant Pseudo-Metrics on Lie Groups for Consistent Statistics -- Koszul Information Geometry and Souriau Geometric Temperature/Capacity of Lie Group Thermodynamics -- The Entropy-Based Quantum Metric -- Geometry of Fisher Information Metric and the Barycenter Map -- Chapter 3: Applications of Information/Entropy Geometric Structures -- Entropy, Information Theory, Information Geometry and Bayesian Inference in Data, Signal and Image Processing and Inverse Problems -- Black-Box Optimization Using Geodesics in Statistical Manifolds -- Natural Gradient Flow in the Mixture Geometry of a Discrete Exponential Family -- Distributed Consensus for Metamorphic Systems Using a Gossip Algorithm for CAT(0) -- Geometric Shrinkage Priors for Kahlerian Signal Filters -- Kahlerian Information Geometry for Signal Processing -- Most Likely Maximum Entropy for Population Analysis with Region-Censored Data -- General Hyperplane Prior Distributions Based on Geometric Invariances for Bayesian Multivariate Linear Regression -- A New Robust Regression Method Based on Minimization of Geodesic Distances on a Probabilistic

Manifold: Application to Power Laws -- On Monotone Embedding in Information Geometry -- Binary Classification with a Pseudo Exponential Model and Its Application for Multi-Task Learning.

Sommario/riassunto

The aim of this book is to provide an overview of current work addressing this topic of research that explores the geometric structures of information and entropy. We hope that this vast survey on the geometric structure of information and entropy will motivate readers to go further and explore the emerging domain of 'Science of Information'.
