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Titolo	Counting Statistics for Dependent Random Events : With a Focus on Finance / / by Enrico Bernardi, Silvia Romagnoli
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Nota di contenuto	Preface -- I The Main Ingredients -- 1 Clustering -- 2 Copula Function and C-volume -- 3 Combinatorics and Random Matrices: A Brief Review -- II Mixing the Ingredients: A Recipe for a New Aggregation Algorithm -- 4 Counting a Random Event: Traditional Approach and New Perspectives -- 5 A New Copula-based Approach for Counting: The Distorted and the Limiting Case -- 6 Real Data Empirical Applications.
Sommario/riassunto	This book on counting statistics presents a novel copula-based approach to counting dependent random events. It combines clustering, combinatorics-based algorithms and dependence structure in order to tackle and simplify complex problems, without disregarding the hierarchy of or interconnections between the relevant variables.

These problems typically arise in real-world applications and computations involving big data in finance, insurance and banking, where experts are confronted with counting variables in monitoring random events. In this new approach, combinatorial distributions of random events are the core element. In order to deal with the high-dimensional features of the problem, the combinatorial techniques are used together with a clustering approach, where groups of variables sharing common characteristics and similarities are identified and the dependence structure within groups is taken into account. The original problems can then be modeled using new classes of copulas, referred to here as clusterized copulas, which are essentially based on preliminary groupings of variables depending on suitable characteristics and hierarchical aspects. The book includes examples and real-world data applications, with a special focus on financial applications, where the new algorithms' performance is compared to alternative approaches and further analyzed. Given its scope, the book will be of interest to master students, PhD students and researchers whose work involves or can benefit from the innovative methodologies put forward here. It will also stimulate the empirical use of new approaches among professionals and practitioners in finance, insurance and banking.