Theory of Random Sets (Probability and Its Applications)

Ilya Molchanov
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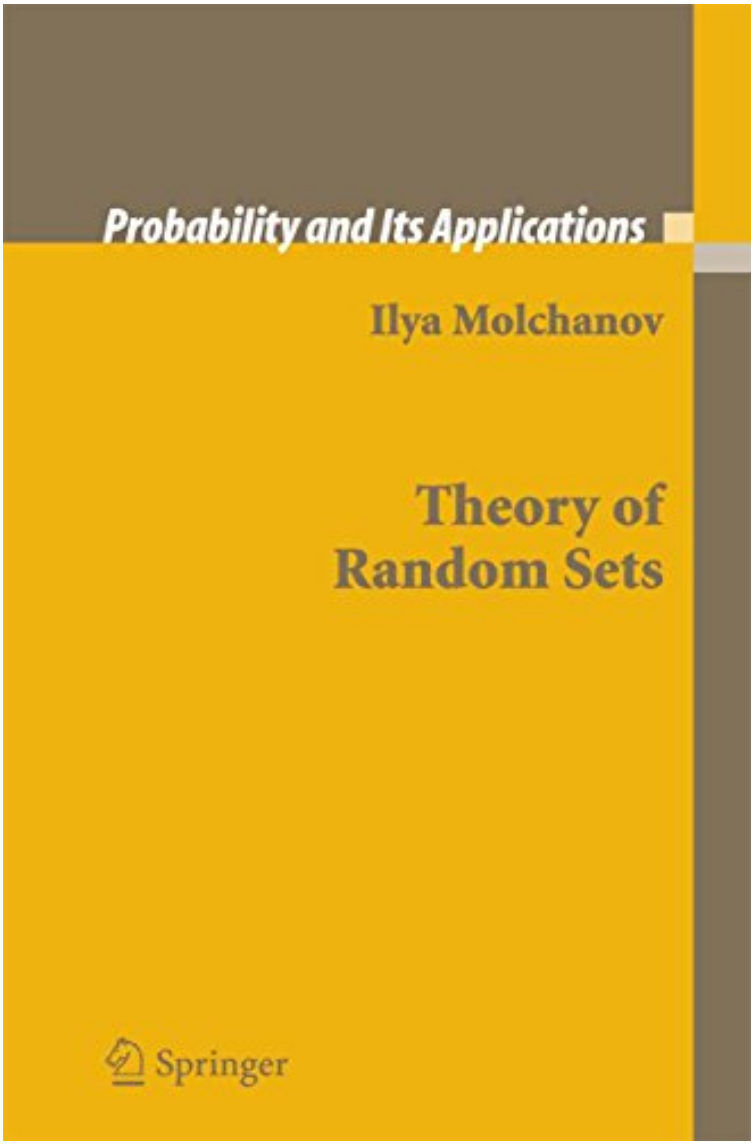

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Ilya Molchanov : Theory of Random Sets (Probability and Its Applications) before purchasing it in order to gage whether or not it would be worth my time, and all praised Theory of Random Sets (Probability and Its Applications):

6 of 8 people found the following review helpful. Excellent Comprehensive Survey of Random SetsBy Eclectic ReaderThis book fills a large gap in random sets, which is perhaps the most underutilized field of mathematics, in terms of comparing its power and it potential in applications. This book is good enough and solid enough to fill this need, and it might therefore allow serious applications to go forward. Just the basics of probability theory and measure theory are needed to understand and work through the book. Very highly recommended.

This is the first systematic exposition of random sets theory since Matheron (1975), with full proofs, exhaustive bibliographies and literature notesInterdisciplinary connections and applications of random sets are emphasized throughout the bookAn extensive bibliography in the book is available on the Web at http://liinwww.ira.uka.de/bibliography/math/random.closed.sets.html, and is accompanied by a search engine

From the reviews: "Together with the foundations of the modern probability theory Kolmogorov introduced the concept of a random set. hellip; The book is written in a theorem-proof style, where the proofs are quite detailed and clearly presented. hellip; to enable easier reading, the author provides visual illustrations where necessary. hellip; the author provides a vast bibliography on the subject, which is completely searchable on authorrsquo;s website. The book should be read and even more studied by any researcher or a student considering research in this field." (Ita Cirovic Donev, MathDL, January, 2006) "This book is part of the Springer-Verlag series lsquo;Probability and its applicationsrsquo;. hellip; The most remarkable aspect of the book is the reader-friendly structure and the style in which it has been written. There are masses of examples either worked out in the book or left for the reader. A number of facts are equipped with graphical illustrations. This book has a good index and index of notations, and a very detailed bibliography hellip; . It will be an essential part of every mathematical library." (V. K. Oganyan, Mathematical s, Issue 2006 b) "The book under review develops hellip; an approach in a self-contained and systematic manner. Full proofs are given, and many steps are illustrated by graphs and drawings. The interdisciplinary nature of the theory of random sets within mathematics is well shown. hellip; The book will be an invaluable reference for probabilists, mathematicians, statisticians and electronic and electrical engineers in the fields of image analysis. hellip; The book is highly recommended both for personal use and for libraries." (Janos Galambos, Zentralblatt MATH, Vol. 1109 (11), 2007) "Random sets play an important role in many applications of mathematics hellip; . This book is an important contribution to the mathematical theory and will surely serve as a valuable textbook for students as well as researchers. It presents a self-contained survey of all the significant results hellip; . A number of open problems are presented and each chapter concludes with a list of bibliographical notes." (EMS Newsletter, September, 2007)From the Back CoverStochastic geometry is a relatively new branch of mathematics. Although its predecessors such as geometric probability date back to the 18th century, the formal concept of a random set was developed in the beginning of the 1970s. Theory of Random Sets presents a state of the art treatment of the modern theory, but it does not neglect to recall and build on the foundations laid by Matheron and others, including the vast advances in stochastic geometry, probability theory, set-valued analysis, and statistical inference of the 1990s. The book is entirely self-contained, systematic and exhaustive, with the full proofs that are necessary to gain insight. It shows the various interdisciplinary relationships of random set theory within other parts of mathematics, and at the same time, fixes terminology and notation that are often varying in the current literature to establish it as a natural part of modern probability theory, and to provide a platform for future development. An extensive, searchable bibliography to accompany the book is freely available via the web. The book will be an invaluable reference for probabilists, mathematicians in convex and integral geometry, set-valued analysis, capacity and potential theory, mathematical statisticians in spatial statistics and image analysis, specialists in mathematical economics, and electronic and electrical engineers interested in image analysis.About the AuthorIlya Molchanov is Professor of Probability Theory in the Department of Mathematical Statistics and Actuarial Science at the University of Berne, Switzerland.