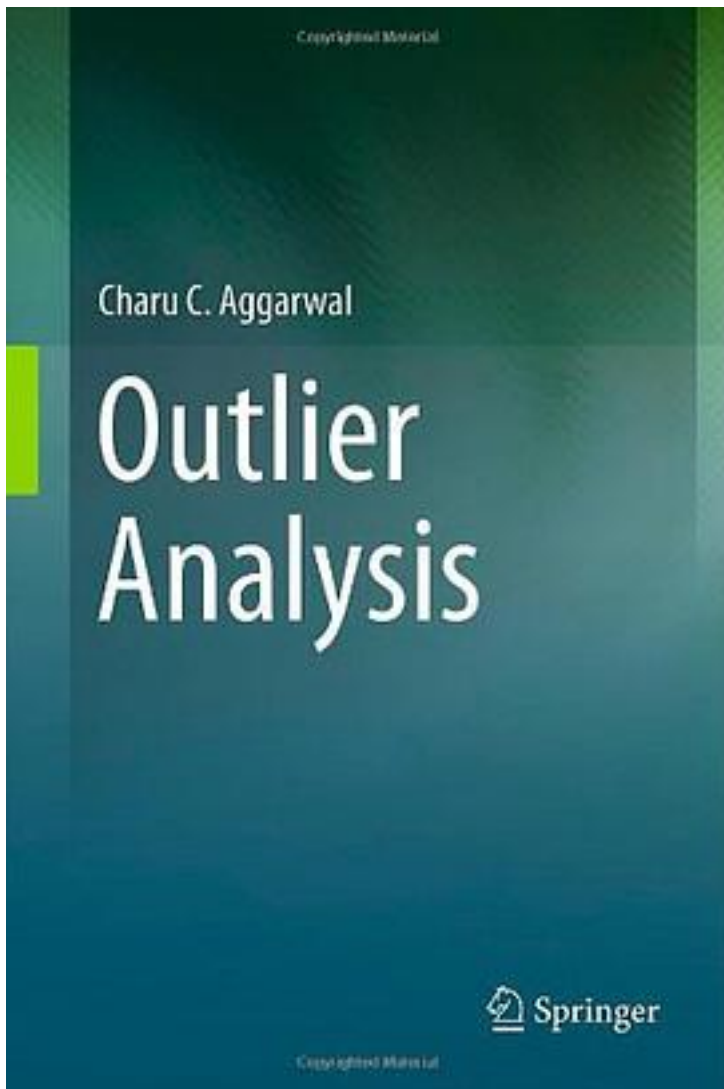# Outlier Analysis

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With the increasing advances in hardware technology for data collection, and advances in software technology (databases) for data organization, computer scientists have increasingly participated in the latest advancements of the outlier analysis field. Computer scientists, specifically, approach this field based on their practical experiences in managing large amounts of data, and with far fewer assumptions- the data can be of any type, structured or unstructured, and may be extremely large. Outlier Analysis is a comprehensive exposition, as understood by data mining experts, statisticians and computer scientists. The book has been organized carefully, and emphasis was placed on simplifying the content, so that students and practitioners can also benefit. Chapters will typically cover one of three areas: methods and techniques commonly used in outlier analysis, such as linear methods, proximity-based methods, subspace methods, and supervised methods; data domains, such as, text, categorical, mixed-attribute, time-series, streaming, discrete sequence, spatial and network data; and key applications of these methods as applied to diverse domains such as credit card fraud detection, intrusion detection, medical diagnosis, earth science, web log analytics, and social network analysis are covered.

作者介绍:

From the Back Cover

This book provides comprehensive coverage of the field of outlier analysis from a computer science point of view. It integrates methods from data mining, machine learning, and statistics within the computational framework and therefore appeals to multiple communities. The chapters of this book can be organized into three categories:Basic algorithms: Chapters 1 through 7 discuss the fundamental algorithms for outlier analysis, including probabilistic and statistical methods, linear methods, proximity-based methods, high-dimensional (subspace) methods, ensemble methods, and supervised methods.Domain-specific methods: Chapters 8 through 12 discuss outlier detection algorithms for various domains of data, such as text, categorical data, time-series data, discrete sequence data, spatial data, and network data.Applications: Chapter 13 is devoted to various applications of outlier analysis. Some guidance is also provided for the practitioner.<The second edition of this book is more detailed and is written to appeal to both researchers and practitioners. Significant new material has been added on topics such as kernel methods, one-class support-vector machines, matrix factorization, neural networks, outlier ensembles, time-series methods, and subspace methods. It is written as a textbook and can be used for classroom teaching.

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About the Author

Charu C. Aggarwal is a Distinguished Research Staff Member (DRSM) at the IBM T. J.Watson Research Center in Yorktown Heights, New York. He completed his undergraduatedegree in Computer Science from the Indian Institute of Technology at Kanpur in 1993 andhis Ph.D. in Operations Research from the Massachusetts Institute of Technology in 1996.He has published more than 300 papers in refereed conferences andjournals, and has applied for or been granted more than 80 patents.He is author or editor of 15 books, including textbooks on data mining,recommender systems, and outlier analysis. Because of the commercialvalue of his patents, he has thrice been designated a MasterInventor at IBM. He has received several internal and externalawards, including the EDBT Test-of-Time Award (2014) andthe IEEE ICDM Research Contributions Award (2015). He has alsoserved as program or general chair of

many major conferences in datamining. He is a fellow of the SIAM, ACM, and the IEEE, for "contributions to knowledgediscovery and data mining algorithms."

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标签

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评论

作者很牛，也算上著作了吧，机器学习的小分支

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书评

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