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Titolo	Stream Data Mining: Algorithms and Their Probabilistic Properties / / by Leszek Rutkowski, Maciej Jaworski, Piotr Duda
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Soggetti	Computational intelligence Data mining Signal processing Image processing Speech processing systems Big data Artificial intelligence Computational Intelligence Data Mining and Knowledge Discovery Signal, Image and Speech Processing Big Data/Analytics Artificial Intelligence
Lingua di pubblicazione	Inglese
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Nota di contenuto	Introduction and Overview of the Main Results of the Book -- Basic concepts of data stream mining -- Decision Trees in Data Stream Mining -- Splitting Criteria based on the McDiarmid’s Theorem.
Sommario/riassunto	This book presents a unique approach to stream data mining. Unlike the vast majority of previous approaches, which are largely based on heuristics, it highlights methods and algorithms that are mathematically justified. First, it describes how to adapt static decision trees to accommodate data streams; in this regard, new splitting criteria are developed to guarantee that they are asymptotically equivalent to the classical batch tree. Moreover, new decision trees are

designed, leading to the original concept of hybrid trees. In turn, nonparametric techniques based on Parzen kernels and orthogonal series are employed to address concept drift in the problem of non-stationary regressions and classification in a time-varying environment. Lastly, an extremely challenging problem that involves designing ensembles and automatically choosing their sizes is described and solved. Given its scope, the book is intended for a professional audience of researchers and practitioners who deal with stream data, e. g. in telecommunication, banking, and sensor networks.