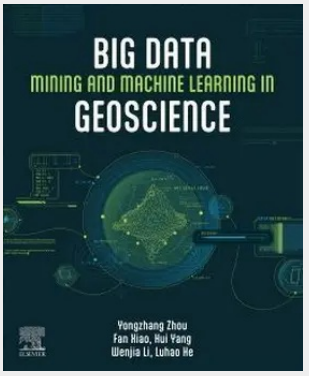
Zhou / Xiao / Yang

Big Data Mining and Machine Learning in Geoscience



190,50 €
190,50 € (zzgl. MwSt.)

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Big Data Mining and Machine Learning in Geoscience offers a comprehensive overview of techniques and applications of data science in the geosciences. Sections cover essential, foundational concepts in data cleaning and preprocessing, thus ensuring the quality and reliability of geoscientific data. Next, the book explores dimensionality reduction methods designed to simplify high-dimensional data without losing critical information. The text covers classification and prediction techniques that enable the identification of patterns and forecasting of geological phenomena, and graphical data processing and handling of infinite stream data and time series are highlighted, along with their importance in real-time monitoring and dynamic systems analysis. In addition, the book explores advanced machine learning and deep learning methods, showcasing their transformative impact on geoscientific research. It also introduces knowledge graphs and large language models as emerging tools that enhance data integration, interpretation, and discovery. AI-driven geology is presented as a forward-looking approach that leverages artificial intelligence to revolutionize traditional geological practices, offering improved accuracy and insight. Throughout, practical examples and case studies illustrate how these technologies can be applied to solve complex problems in geoscience.

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