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| Autore                  | Dixon Matthew F                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Titolo                  | Machine Learning in Finance [[electronic resource] ] : From Theory to Practice // by Matthew F. Dixon, Igor Halperin, Paul Bilokon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Pubbl/distr/stampa      | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| Edizione                | [1st ed. 2020.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Descrizione fisica      | 1 online resource (XXV, 548 p. 97 illus., 83 illus. in color.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Disciplina              | 332.0285554                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Soggetti                | Statistics<br>Applied mathematics<br>Engineering mathematics<br>Statistics for Business, Management, Economics, Finance, Insurance<br>Applications of Mathematics<br>Statistics, general                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Nota di bibliografia    | Includes bibliographical references and index.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Nota di contenuto       | Chapter 1. Introduction -- Chapter 2. Probabilistic Modeling -- Chapter 3. Bayesian Regression & Gaussian Processes -- Chapter 4. Feed Forward Neural Networks -- Chapter 5. Interpretability -- Chapter 6. Sequence Modeling -- Chapter 7. Probabilistic Sequence Modeling -- Chapter 8. Advanced Neural Networks -- Chapter 9. Introduction to Reinforcement learning -- Chapter 10. Applications of Reinforcement Learning -- Chapter 11. Inverse Reinforcement Learning and Imitation Learning -- Chapter 12. Frontiers of Machine Learning and Finance.                                                                              |
| Sommario/riassunto      | This book introduces machine learning methods in finance. It presents a unified treatment of machine learning and various statistical and computational disciplines in quantitative finance, such as financial econometrics and discrete time stochastic control, with an emphasis on how theory and hypothesis tests inform the choice of algorithm for financial data modeling and decision making. With the trend towards increasing computational resources and larger datasets, machine learning has grown into an important skillset for the finance industry. This book is written for advanced graduate students and academics in |

financial econometrics, mathematical finance and applied statistics, in addition to quants and data scientists in the field of quantitative finance. Machine Learning in Finance: From Theory to Practice is divided into three parts, each part covering theory and applications. The first presents supervised learning for cross-sectional data from both a Bayesian and frequentist perspective. The more advanced material places a firm emphasis on neural networks, including deep learning, as well as Gaussian processes, with examples in investment management and derivative modeling. The second part presents supervised learning for time series data, arguably the most common data type used in finance with examples in trading, stochastic volatility and fixed income modeling. Finally, the third part presents reinforcement learning and its applications in trading, investment and wealth management. Python code examples are provided to support the readers' understanding of the methodologies and applications. The book also includes more than 80 mathematical and programming exercises, with worked solutions available to instructors. As a bridge to research in this emergent field, the final chapter presents the frontiers of machine learning in finance from a researcher's perspective, highlighting how many well-known concepts in statistical physics are likely to emerge as important methodologies for machine learning in finance.

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