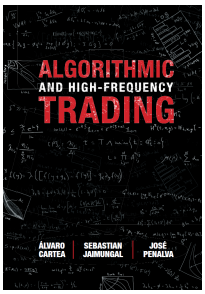
Algo and HF Trading

Here you will find some information about our book, sample code (http://sebastian.statistics.utoronto.ca/books/algo-and-hf-trading/code/), data (http://sebastian.statistics.utoronto.ca/books/algo-and-hf-trading/data/), and errata (http://sebastian.statistics.utoronto.ca/books/algo-and-hf-trading/algo-and-hf-trading-errata/).



published by **Cambridge University Press**...

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The design of trading algorithms requires sophisticated mathematical models backed up by reliable data. In this textbook, the authors develop models for algorithmic trading in contexts such as executing large orders, market making, targeting VWAP and other schedules, trading pairs or collection of assets, and executing in dark pools. These models are grounded on how the exchanges work, whether the algorithm is trading with better informed traders (adverse selection), and the type of information available to market participants at both ultra-high and low frequency. Algorithmic and High-Frequency Trading is the first book that combines sophisticated mathematical modelling, empirical facts and financial economics, taking the reader from basic ideas to cutting-edge research and practice. If you need to understand how modern electronic markets operate, what information provides a trading edge, and how other market participants may affect the profitability of the algorithms, then this is the book for you.

- The first book on the mathematics of algorithmic trading
- Combines market microstructure, data and algorithms in one place
- Ideal for a one-semester course at graduate level

Authors

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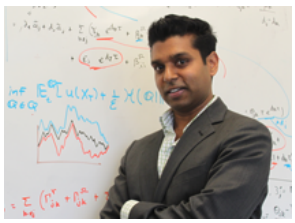

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Reviews and Endorsements

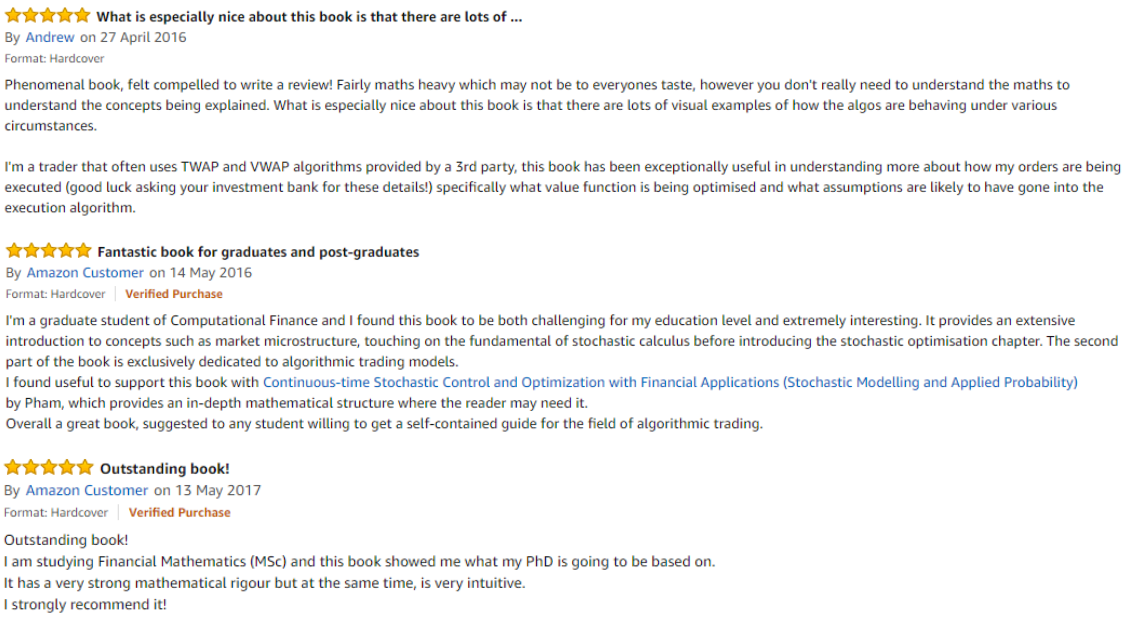
'*[This book] is an important and timely textbook on algorithmic trading. Human traders in financial markets are an endangered species, gradually replaced by computers and algorithms. In this new world, designing and coding trading strategies requires knowledge of market microstructure, basic economic principles governing price formation in financial markets, and stylized facts about price dynamics and trading activity. It also requires specific mathematical tools, such as stochastic control, and*

understanding of how these tools are used to solve trading problems. Algorithmic and High-Frequency Trading is unique in that it provides a unified treatment of these topics. I enjoyed reading it and recommend it highly to students or practitioners interested in mathematical models used in algorithmic trading.` **Thierry Foucault**, ***HEC Paris***

`*This book is the first to give a thorough coverage of optimal strategies in algorithmic and high-frequency trading, from the very modern point of view of dynamic stochastic optimization and based on cutting-edge work, much of which is by these authors. Other books cover the mechanics and statistics of high-frequency market dynamics, but none covers the mathematical aspects to this depth. It would be a great textbook for a graduate course in optimal trading.*` **Robert Almgren**, ***Quantitative Brokers***

`*This textbook is a welcome addition to the literature on algorithmic trading and the high-frequency markets. It fills a significant gap by bringing cutting-edge mathematical models to bear on the analysis and implementation of practical algorithms. Using a unique blend of microstructure theory, financial data analysis, and mathematical models, the authors walk the reader through the maze of the high-frequency markets, detailing how the exchanges work, and what kind of data they generate. Trading algorithms and their practical implementations are described in easy-to-understand prose, and illustrated with enlightening simulations. This text is ideal for graduate students and researchers in financial mathematics and engineering, as well as for practitioners already working in the field.*` **René Carmona**, ***Princeton University***

Sample Reviews from Amazon.co.uk



★★★★★ **What is especially nice about this book is that there are lots of ...**
By Andrew on 27 April 2016
Format: Hardcover

Phenomenal book, felt compelled to write a review! Fairly maths heavy which may not be to everyones taste, however you don't really need to understand the maths to understand the concepts being explained. What is especially nice about this book is that there are lots of visual examples of how the algos are behaving under various circumstances.

I'm a trader that often uses TWAP and VWAP algorithms provided by a 3rd party, this book has been exceptionally useful in understanding more about how my orders are being executed (good luck asking your investment bank for these details!) specifically what value function is being optimised and what assumptions are likely to have gone into the execution algorithm.

★★★★★ **Fantastic book for graduates and post-graduates**
By Amazon Customer on 14 May 2016
Format: Hardcover | Verified Purchase

I'm a graduate student of Computational Finance and I found this book to be both challenging for my education level and extremely interesting. It provides an extensive introduction to concepts such as market microstructure, touching on the fundamental of stochastic calculus before introducing the stochastic optimisation chapter. The second part of the book is exclusively dedicated to algorithmic trading models.
I found useful to support this book with Continuous-time Stochastic Control and Optimization with Financial Applications (Stochastic Modelling and Applied Probability) by Pham, which provides an in-depth mathematical structure where the reader may need it.
Overall a great book, suggested to any student willing to get a self-contained guide for the field of algorithmic trading.

★★★★★ **Outstanding book!**
By Amazon Customer on 13 May 2017
Format: Hardcover | Verified Purchase

Outstanding book!
I am studying Financial Mathematics (MSc) and this book showed me what my PhD is going to be based on.
It has a very strong mathematical rigour but at the same time, is very intuitive.
I strongly recommend it!

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