Python For Finance

Build real-life Python applications for quantitative finance and financial engineering

Yuxing Yan

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Synopsis

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About This Book

Estimate market risk, form various portfolios, and estimate their variance-covariance matrixes using real-world data. Explains many financial concepts and trading strategies with the help of graphs. A step-by-step tutorial with many Python programs that will help you learn how to apply Python to finance.

Who This Book Is For

Python for Finance is perfect for graduate students, practitioners, and application developers who wish to learn how to utilize Python to handle their financial needs. Basic programming knowledge is helpful, but not necessary.

What You Will Learn

- Build a financial calculator based on Python.
- Learn how to price various types of options such as European, American, average, lookback, and barrier options.
- Write Python programs to download data from Yahoo! Finance.
- Estimate returns and convert daily returns into monthly or annual returns.
- Form an n-stock portfolio and estimate its variance-covariance matrix.
- Estimate VaR (Value at Risk) for a stock or portfolio.
- Run CAPM (Capital Asset Pricing Model) and the Fama-French 3-factor model.
- Learn how to optimize a portfolio and draw an efficient frontier.
- Conduct various statistic tests such as T-tests, F-tests, and normality tests.

In Detail

Python is a free and powerful tool that can be used to build a financial calculator and price options, and can also explain many trading strategies and test various hypotheses. This book details the steps needed to retrieve time series data from different public data sources. Python for Finance explores the basics of programming in Python. It is a step-by-step tutorial that will teach you, with the help of concise, practical programs, how to run various statistic tests. This book introduces you to the basic concepts and operations related to Python. You will also learn how to estimate illiquidity, Amihud (2002), liquidity measure, Pastor and Stambaugh (2003), Roll spread (1984), spread based on high-frequency data, beta (rolling beta), draw volatility smile and skewness, and construct a binomial tree to price American options. This book is a hands-on guide with easy-to-follow examples to help you learn about option theory, quantitative finance, financial modeling, and time series using Python.

Book Information

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Really not very good. I was intrigued by the table of contents and the topics covered, but the depth of any one of those topics is so shallow that I imagine the author put this book together in a weekend using google and wikipedia. I skimmed through it and it appears each topic gets about 1 page of coverage with a little bit of code and not much of an explanation on how it works. Additionally, there are no real algorithms here, and instead you get shown how the author would use some open source library (without any notes about the nuances of those libraries.) If you’ve ever done anything in finance with python, this book is a waste of paper for you. If you are new to python perhaps there is some utility in seeing how python could be utilized. But the superficial coverage of the topics means you really aren’t going to be able to just take the code and do anything meaningful yourself. Save your money and just use stackexchange/google. I got the kindle edition and returned the book within 5 minutes.

Completely lacking in structure. This is not a book so much as a set of post-it notes assembled in completely random order with sections repeated often and practically verbatim. How many times throughout the book can you repeat the process for downloading stock data from Yahoo Finance (for example)? I was really anticipating receiving this book since there is nothing really out there that’s specifically targeted at Python for finance people (that I know of). The closest is "Python for Data Analysis" which is a very good book. I’m so disappointed. Author, please look at that book as an idea as to how to structure and organize a subject and then redo this. The reason I did not give this one star is that there are some good pieces of code in here to be found if you laboriously leaf through the book. I’m “Fighting Tribeca Irish”’s significant other (shared account).

This book might not serve well anyone seriously trying to get into the finance world by programming applications in Python. On a more optimistic note, the book might be better directed at an undergraduate who has read about topics like Black Scholes pricing of options. And who wants to
quickly code some simple test programs. The back of the book says it is useful for practitioners. Nonsense. Practitioners in finance already have scads of far more complex programs for modelling. Each chapter of the book basically is a simple rendition of code for the chapter topic. Somewhat superficial. As another reviewer perhaps accurately observed, it is as though the author just went through Wikipedia and dragged out several finance topics and the starting equations. And then coded those into chapters. One good aspect is that the text describes how to use two standard Python modules, NumPy and SciPy. For numerical scientific and financial contexts. If you do end up using this book, you should absolutely learn how to use the routines in those modules. First, the modules have been extensively debugged and are being freely maintained. Second, you add more value for yourself by starting there rather than wasting your time recoding their routines. Though granted, an exception could be where you explicitly want to recode some of their routines as a learning experience for yourself.

First of all this is not an in-depth python book or an in-depth finance book. So if you are looking for something with a strong technical bent on python or finance this is not it. It is, however, a great read if you are familiar with doing a lot of finance in another language like R and want to transition to python. With bloomberg providing a python API and C++ still being a real pain the rear this is a good way for more "analyst" types to become much more fluent and competent using a vastly more flexible language. It is not mega detailed - basically a "crash through" approach to doing a bit of python and doing it quickly. This is by no means a standalone solution to anything. The best use of this book is in conjunction with something more rigorous for finance and python. Aside from that it could be put to good use in an undergrad finance class so that instead of messing around in excel people actually learn a bit of code that they can build on later.

I jumped on the opportunity to receive a review copy of Python for Finance. I've been programming in Python for the last 2 years, and I'm particularly interested in technical computing. Python for Finance is targeted for graduate students in finance, although I believe it is also appropriate for senior-level computer science majors who are interested using Python for financial computing. Let me start with a few minor quibbles. First, I've never cared for how Pakt formats their books; it's clunky and seems dated. Second, there are a number of places in the book where the English is awkward and could have benefited from some decent editing. Because Python for Finance is fairly short (about 350 pages of content), don't expect it to be the only book you'll need if you want to really learn Python. It will, though, get you started and up to speed with the language. About a third
of the way through, the author introduces the NumPy and SciPy modules, which are essential for technical computing. Because of the scope of the book, these are given limited coverage, but enough to provide readers with an understanding of how powerful these tools are. Python for Finance then moves into plotting, analysis of time series, and then jumps into option modeling, which is where the book really starts to tie things together, including various tools to pull financial information from the web. A chapter on the ins and outs of Python loops precedes what was my favorite chapter - Monte Carlo Simulations and Options. This chapter really highlights the power of Python for technical computing. Overall, I enjoyed Python for Finance. I learned new tools and techniques in Python as well as a significant amount about financial computing.

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