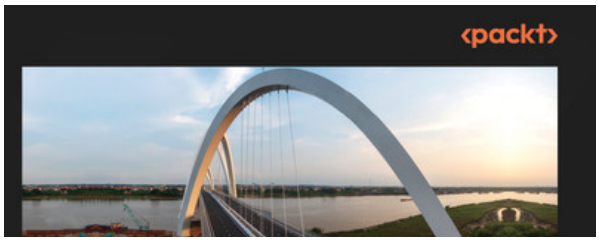
BOOK

Python for Algorithmic Trading Cookbook

★★☆☆☆ 1 review

By Jason Strimpel



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Start

TIME TO COMPLETE:
9h 9m

LEVEL:
Intermediate to advanced

SKILLS:
Python

404 pages

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Harness the power of Python libraries to transform freely available financial market data into algorithmic trading strategies and deploy them into a live trading environment

Key Features

- Follow practical Python recipes to acquire, visualize, and store market data for market research
- Design, backtest, and evaluate the performance of trading strategies using professional techniques
- Deploy trading strategies built in Python to a live trading environment with API connectivity
- Purchase of the print or Kindle book includes a free PDF eBook

Book Description

Discover how Python has made algorithmic trading accessible to non-professionals with unparalleled expertise and practical insights from Jason Strimpel, founder of PyQuant News and a seasoned professional with global experience in trading and risk management. This book guides you through from the basics of quantitative finance and data acquisition to advanced stages of backtesting and live trading.

Detailed recipes will help you leverage the cutting-edge OpenBB SDK to gather freely available data for stocks, options, and futures, and build your own research environment using lightning-fast storage techniques like SQLite, HDF5, and ArcticDB. This book shows you how to use SciPy and statsmodels to identify

learned, you'll set up and deploy your algorithmic trading strategies in a live trading environment using the Interactive Brokers API, allowing you to stream tick-level data, submit orders, and retrieve portfolio details.

By the end of this algorithmic trading book, you'll not only have grasped the essential concepts but also the practical skills needed to implement and execute sophisticated trading strategies using Python.

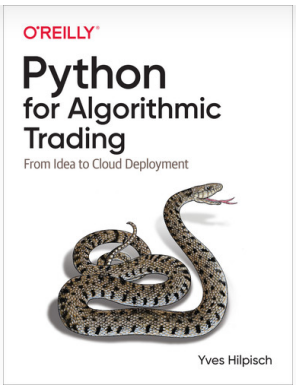
What you will learn

- Acquire and process freely available market data with the OpenBB Platform
- Build a research environment and populate it with financial market data
- Use machine learning to identify alpha factors and engineer them into signals
- Use VectorBT to find strategy parameters using walk-forward optimization
- Build production-ready backtests with Zipline Reloaded and evaluate factor performance
- Set up the code framework to connect and send an order to Interactive Brokers

Who this book is for

Python for Algorithmic Trading Cookbook equips traders, investors, and Python developers with code to design, backtest, and deploy algorithmic trading strategies. You should have experience investing in the stock market, knowledge of Python data structures, and a basic understanding of using Python libraries like pandas. This book is also ideal for individuals with Python experience who are already active in the market or are aspiring to be.

You might also like

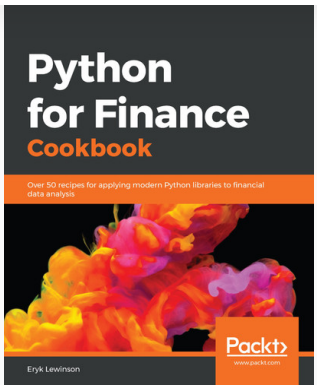


BOOK

Python for Algorithmic Trading

By Yves Hilpisch

Algorithmic trading, once the exclusive domain of institu-

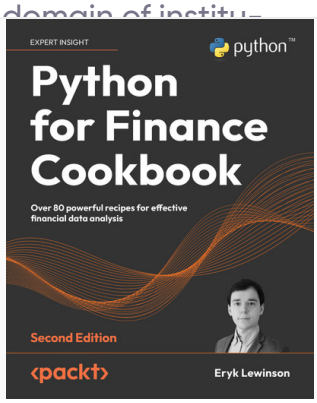


BOOK

Python for Finance Cookbook

By Eryk Lewinson

Solve common and not-so-common fi-nancial problems us

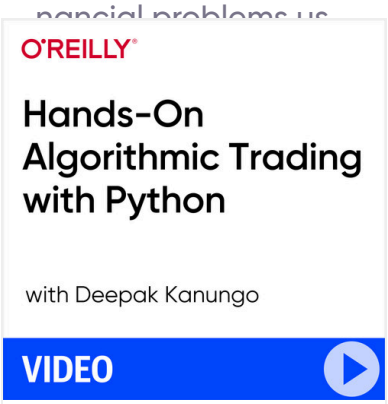


BOOK

Python for Finance Cookbook - Secon... Edition

By Eryk Lewinson

Use modern Python libraries such as pan-das, NumPy, and... scikit-learn and pop-ular machine learn-ing and deep learn-ing methods to solve financial modelling



COURSE

Hands-On Algorithmic Tradin... with Python

With Deepak K. Kanungo

The pace of automa-tion in the investment management indus... try has become fre-netic in the last decade because of algorithmic trading and machine learn-

apply Python to dif-ferent aspects of al-

Book Description

Python is one of the

covering the latest technologies. With coverage ranging from introductory programming to new and emerging technologies, as well as expert advice from industry-leading figures, Packt has great content for any technical professional looking to stay relevant and up-to-date.

forms. Some of the biggest buy- and sell-side institutions make heavy use of Python. By exploring options for systematically building and deploying automated algorithmic trading strategies, you level the playing field. Set up a proper Python environment for algorithmic trading Learn how to retrieve financial data from public and proprietary data sources Explore vectorization for financial analytics with NumPy and pandas Master vectorized backtesting of different algorithmic trading strategies Generate market predictions by using machine learning and deep learning Tackle real-time streaming data with socket programming You will use popular Python libraries that, in a few lines of code, provide the means to

libraries. In this book, you'll cover different ways of downloading financial data and preparing it for modeling. You'll calculate popular indicators used in technical analysis, such as Bollinger Bands, MACD, RSI, and backtest automatic trading strategies Next, you'll cover time series analysis and models, such as exponential smoothing, ARIMA, and GARCH (including multivariate specifications), before exploring the popular CAPM and the Fama-French three-factor model. You'll then discover how to optimize asset allocation and use Monte Carlo simulations for tasks such as calculating the price of American options and estimating the Value at Risk (VaR). In later chapters, you'll work through an entire data science project

exploratory data analysis to help you visualize and better understand financial data. While doing so, you will also learn how to use Streamlit to create elegant, interactive web applications to present the results of technical analyses. Using the recipes in this book, you will become proficient in financial data analysis, be it for personal or professional projects. You will also understand which potential issues to expect with such analyses and, more importantly, how to overcome them.

What you will learn

Preprocess, analyze, and visualize financial data Explore time series modeling with statistical (exponential smoothing, ARIMA) and machine learning models Uncover advanced time series forecasting algorithms such as Meta's Prophet

process and technologies for developing your own proprietary algorithmic trading strategies. There is no secret formula or algorithm for trading and investing success - there are no substitutes for continual learning, experimentation, experience and hard work. This course will give you an edge in your explorations of this exciting and complex domain. Note that live trading is out of scope for the course.

What you'll learn - and how you can apply it By the end of this video course you'll understand:

The advantages and disadvantages of algorithmic trading The different types of models used to generate trading and investment strategies The fundamental concepts, processes, and technologies used for researching,

ing advanced classifiers such as random forest, XGBoost, LightGBM, and stacked models. You'll then be able to tune the hyperparameters of the models and handle class imbalance. Finally, you'll focus on learning how to use deep learning (PyTorch) for approaching financial tasks. By the end of this book, you'll have learned how to effectively analyze financial data using a recipe-based approach. What you will learn Download and preprocess financial data from different sources Backtest the performance of automatic trading strategies in a real-world setting Estimate financial econometrics models in Python and interpret their results Use Monte Carlo simulations for a variety of tasks such as derivatives valuation and risk assessment

Explore volatility modeling using univariate and multivariate GARCH models Investigate various approaches to asset allocation Learn how to approach ML-projects using an example of default prediction Explore modern deep learning models such as Google's TabNet, Amazon's DeepAR and NeuralProphet Who this book is for This book is intended for financial analysts, data analysts and scientists, and Python developers with a familiarity with financial concepts. You'll learn how to correctly use advanced approaches for analysis, avoid potential pitfalls and common mistakes, and reach correct conclusions for a broad range of finance problems. Working knowledge of the Python programming language (particularly libraries

several risk-adjusted metrics for evaluating their performance The paramount importance of risk management and position sizing And you'll be able to: Use the Pandas library to import, analyze, and visualize data from market, fundamental, and alternative sources available for free on the web Design and automate your own specific investment and trading strategies in Python Use the tools you learn in this course to start creating, designing and prototyping your own algorithmic trading strategy in Python Backtest and evaluate the performance of your strategies using the Zipline library This video course is for you because... You're a retail equity investor, financial analyst, or trader who wants to develop algorithmic trading

learning and deep learning techniques to solve different financial problems Understand the different approaches used to model financial time series data Who this book is for This book is for financial analysts, data analysts, and Python developers who want to learn how to implement a broad range of tasks in the finance domain. Data scientists looking to devise intelligent financial strategies to perform efficient financial analysis will also find this book useful. Working knowledge of the Python programming language is mandatory to grasp the concepts covered in the book effectively.

insightful overview of the key financial, statistical and algorithmic trading concepts and technologies used by practitioners You have Python development experience and want to learn how to apply that to open up opportunities in the financial services and investment industry Prerequisites: You should have basic experience trading and investing in equities You should have basic knowledge of Python and Pandas DataFrames You should be able to create a Google Colab document: https://colab.research.google.com/ Recommended preparation: “Algorithmic trading in less than 100 lines of Python code” (article) “Data Analysis with Pandas" (Chapter 5 in Python for Finance, 2nd Edition) “The Trinity of Errors in Financial

Machine Learning and Data Science Blueprints for Finance (book) Read Probabilistic Machine Learning for Finance and Investing (book)