THE PYTHON QUANTS

```
In [198]: model.evaluate(test_data_[cols], test_data['direction'])
          16/16 [==============================] - 0s 800us/step - loss: 0.6931
          accuracy: 0.5507

Out[198]: [0.6931276321411133, 0.5506958365440369]

In [199]: pred = np.where(model.predict(test_data_[cols]) > 0.5, 1, 0)

In [200]: test_data['prediction'] = np.where(pred > 0, 1, -1)
```
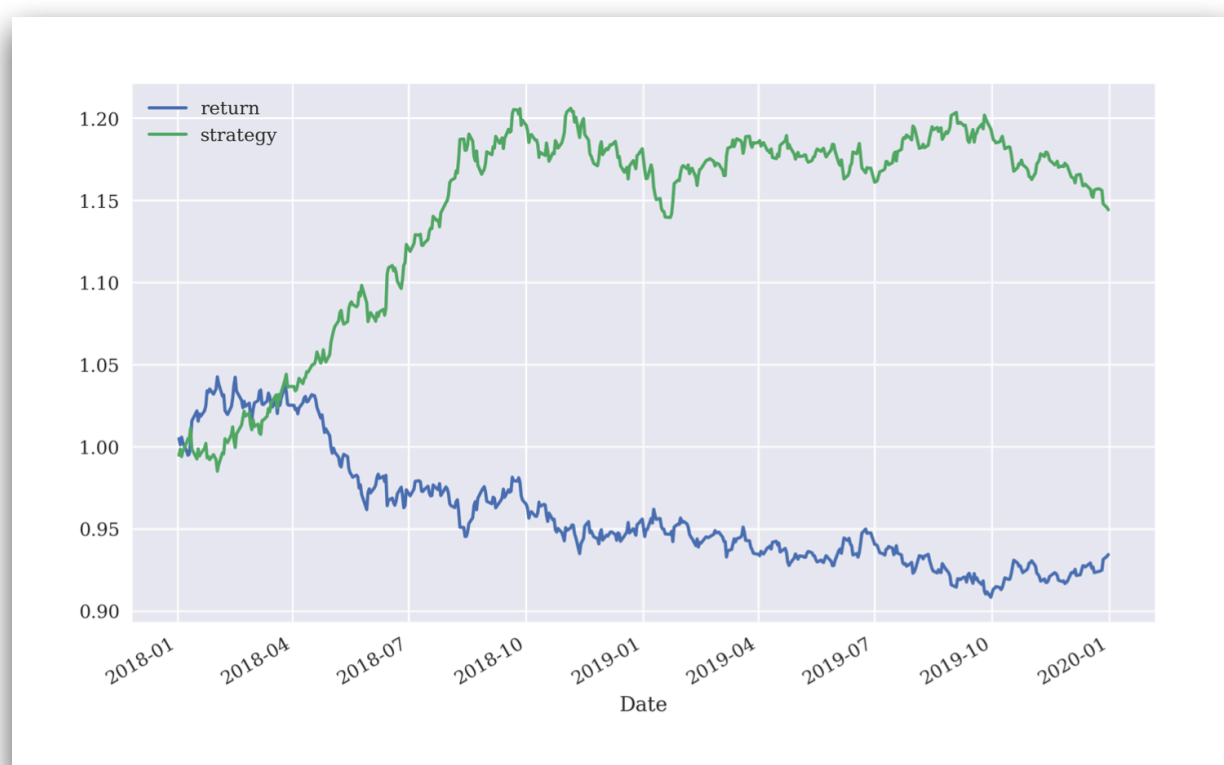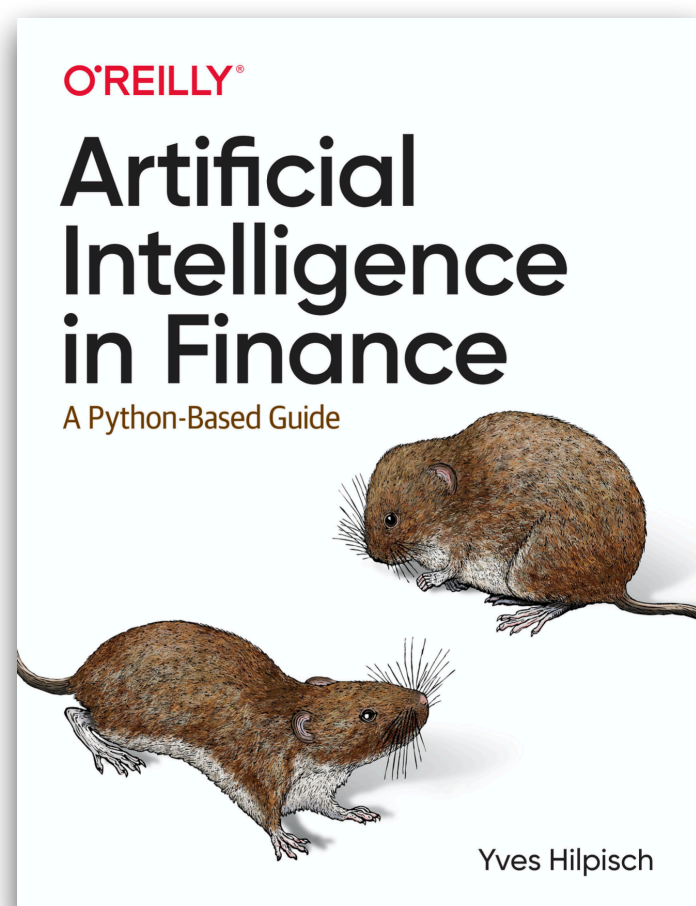
UNIVERSITY CERTIFICATE IN PYTHON FOR ALGORITHMIC TRADING

MASTERING AI-POWERED ALGO TRADING

The AI Machine

AI-FIRST FINANCE & TRADING

We are living in the age of artificial intelligence and of algorithms influencing or taking over many areas in our life. These trends are well illustrated in the field of algorithmic trading of financial instruments.

The ability to process tons of data and to implement trading strategies that generate alpha or manage risk in the form of automated algorithms is key in this field. Due to its expressive syntax and powerful ecosystem of data analytics packages, Python ranks among the top programming languages in the algorithmic trading industry.

Almost all leading hedge funds make use of Python as a strategic element of their IT architectures. Some of the biggest banks in the world manage their trading and risk operations based on systems primarily implemented in Python.

The field offers exciting opportunities for those intending to build their own AI-based algorithmic trading business or those striving to land a job with one of the leaders in the industry.

COMPREHENSIVE ONLINE PROGRAM

We at The Python Quants Group teach Python for Algorithmic Trading for many years. Based on the experience from numerous online and live training classes and programs as well as from building our own algorithmic trading platform The AI Machine (https://aimachine.io), we have compiled a unique program that teaches you all the relevant Python topics, approaches and techniques to implement and deploy your own algorithmic trading strategies. Amongst others, the program covers the three trading platforms from FXCM (https://fxcm.com, for FX & CFD trading), Oanda (https://oanda.com, for CFD trading) and Gemini (https://gemini.com, for cryptocurrency trading).

The classes and elements of the program include the following:

Finance with Python (9h): an introduction to finance from basic principles and a gentle introduction to Python basics based on documentation with more than 170 pages as a PDF

Python for Financial Data Science (20h): with the 2nd edition of our Python for Finance (O'Reilly) book released in late 2018, this central class is based on an updated code base

Python for Algorithmic Trading (50h): this online class is at the core of the program and is based on documentation with about 450 pages as a PDF and over 3,000 lines of Python code

AI & RL in Finance (45h): one class focuses on deep learning techniques for market prediction, building neural networks from scratch and applying packages such as Keras; another class focuses exclusively on reinforcement learning for trading; yet another one covers the book AI in Finance

Tools & Skills (20h): this class cover important topics in setting up a Python environment, using Python and Linux development tools (IPython, VIM, Sublime Text, etc.) as well as selected best practices in coding

Tutorials (15h): exercises and test projects of different difficulty levels allow you to gain more practice and to test your skills

Add On Resources (30+h): the Python for Databases class covers SQL and NoSQL technologies; the Python for Excel class combines the analytical power of Python with Excel; the NLP class introduces techniques for language processing
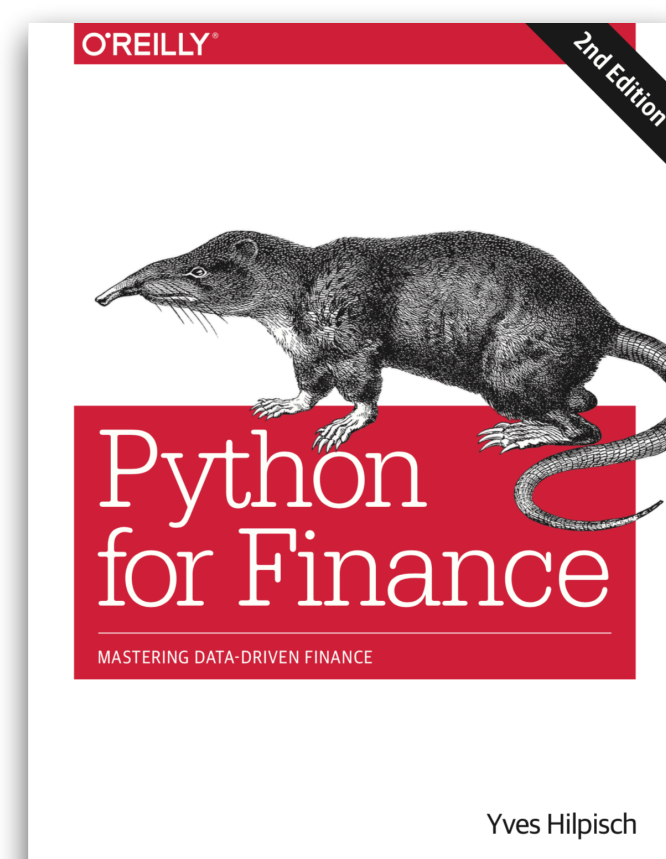
Practice Modules: program delegates take part in three practice modules, one about backtesting trading strategies and two about live trading and deployment

Mathematics Basics: Our **brand new class** *that covers important mathematical concepts (for example, sets, logic, derivatives, integrals, regression) in a simple, practical fashion from ground up. It serves both as a review as well as a preparation for the more involved mathematical applications in the different Certificate Programs.*

The Python Quants Group has designed a unique online training program leading to the first-ever University Certificate in Python for Algorithmic Trading. The Certificate is awarded in cooperation with the htw saar University of Applied Sciences, Germany (http://htwsaar.de).

htw saar Hochschule für Technik und Wirtschaft des Saarlandes University of Applied Sciences

WHO IS THIS PROGRAM FOR?

Professionals: Those already working in the industry and wanting to use Python for algorithmic trading, be it in their current role or to make their next career move. We have had delegates from leading corporate and investment banks as well as hedge funds and asset managers.

Students & Academics: Those with educational and research interests in the field and looking for a professional online training program. The University Certificate represents 5 ECTS points in Europe which can be used in the context of a Masters program in a related field.

HOW LONG IS THE PROGRAM?

The main content of the program can be studied in a self-paced manner over the course of about twelve weeks. In addition, we offer participation in a one-day and one-week live trading practice modules. Once the delegate feels ready, work on the final, graded project — which is required for the Certificate — can be started. The results of the project are to be documented in the form of a Jupyter Notebook. The total duration of the mainly self-paced program is about **16 weeks**. There is **no hard time limit** to finish the program or the final project. In addition, delegates also have **indefinite access to the program resources**, which are regularly updated.

O'REILLY®

Python for Algorithmic Trading

From Idea to Cloud Deployment

Yves Hilpisch

WHAT ARE THE COSTS?

The fee for the University Certificate in Python for Algorithmic Trading program is 2,795 EUR (all fees net of VAT if applicable). The program starts in the week from 13. September 2021. It can be joined at any time and can be done in a completely self-paced manner. Prepare for your next strategic career move and enroll under https://certificate.tpq.io. Or book the **Platinum Package** under http://platinum.tpq.io.
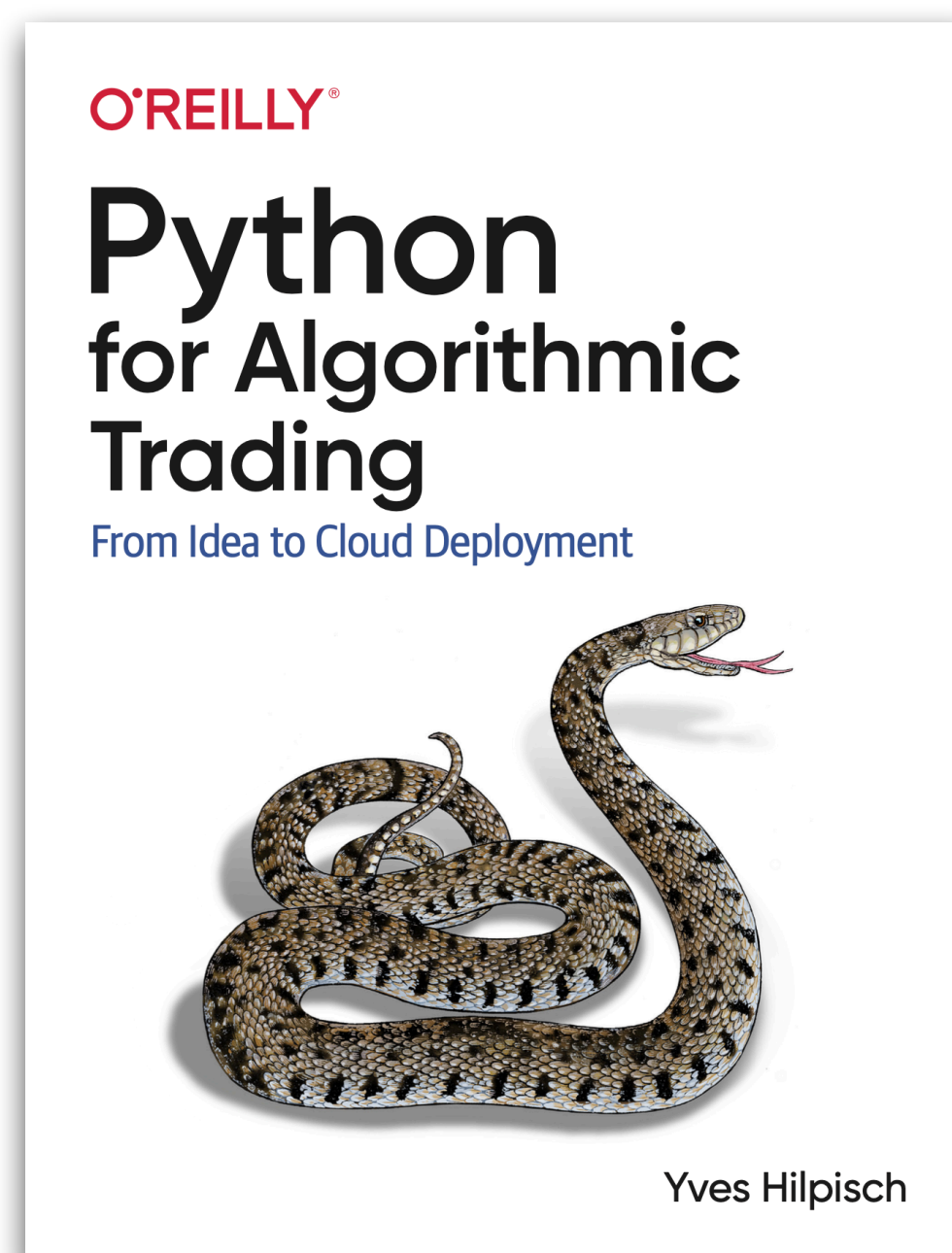
2,195 EUR
(until 31. July 2021)

2,495 EUR
(until 28. August 2021)

2,795 EUR
(from 29. August 2021)

What others say about our online training programs:

"Great stuff! I just purchased it. It is the Holy Grail of algo trading! All the things that someone would have spent hours and hours of research on the web and on books, they are now combined in one source. Thank you 'Prometheus' for delivering 'fire' to mankind!" **Konstantinos**

"I also take the opportunity to say that you guys have the best customer service I have ever experienced in my life. You immediately reply to all emails and inquiries, let alone the world-class quality of the training material. This is the best course I have ever done in my entire life and I am recommending it to anybody." **Vito**

"Five days into the curriculum, and the value so far is already worth more than the total cost of the program. Good stuff." **Eric**

"I'd like to take this opportunity to congratulate you on the quality of the course. It is excellently curated and presented with a clear narrative running through. It is challenging and rewarding in equal measure. I always recommend it to colleagues." **Peter**

"I would like to thank you for this amazing program. Without any doubts it is the best study program I have ever participated in!" **Artem**

"I highly recommend this class to anyone who is interested in a career in finance. The class is engaging, interesting and educational while covering advanced topics of algorithmic trading and derivative pricing. Dr. Hilpisch is a masterful instructor who demonstrates a keen interest in imparting his vast knowledge to his students." **Donald**

PROGRAM DIRECTOR

Dr. Yves J. Hilpisch is founder and CEO of The Python Quants (http://tpq.io), a group focusing on the use of open source technologies for financial data science, artificial intelligence, algorithmic trading and computational finance. He is also founder and CEO of The AI Machine (http://aimachine.io), a company focused on AI-powered algorithmic trading. He is author of the books:

· Financial Theory with Python (O'Reilly)
· Artificial Intelligence in Finance (O'Reilly)
· Python for Algorithmic Trading (O'Reilly)
· Python for Finance, 2nd ed. (O'Reilly)
· Derivatives Analytics with Python (Wiley)
· Listed Volatility and Variance Derivatives (Wiley)

He has written the financial analytics library DX Analytics (http://dx-analytics.com) and organizes conferences, bootcamps and Meetup events about Python for finance and algorithmic trading in Frankfurt, Berlin, Paris, London and New York. He has given keynote speeches at technology conferences in the United States, Europe, India, and Asia.

The Python Quants GmbH

66333 Voelklingen

Germany

T/F +49 3212 112 91 94

https://certificate.tpq.io

training@tpq.io

July 2021