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Machine Learning for Trading Specialization

Start Your Career in Machine Learning for Trading. Learn the machine learning techniques used in quantitative trading.

★★★★★ 3.9 953 ratings



Jack Farmer +1 more instructor

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Starts Jan 29

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WHAT YOU WILL LEARN

- ✓ Understand the structure and techniques used in machine learning, deep learning, and reinforcement learning (RL) strategies.
- ✓ Describe the methods used to optimize an ML-driven trading strategy.
- ✓ Describe the steps required to develop and test an ML-driven trading strategy.
- ✓ Use Keras and Tensorflow to build machine learning models.

SKILLS YOU WILL GAIN

- Finance
- Trading
- Investment
- Machine Learning applied to Finance
- Algorithmic Trading
- Python Programming
- Machine Learning
- Reinforcement Learning Model Development
- Reinforcement Learning Trading Algorithm Optimization
- Reinforcement Learning Trading Strategy Development
- Reinforcement Learning Trading Algo Development



LEARNER CAREER OUTCOMES

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Earn a Certificate upon completion



100% online courses

Start instantly and learn at your own schedule.



Flexible Schedule

Set and maintain flexible deadlines.



Intermediate Level

Familiarization with basic concepts in Machine Learning and Financial Markets; advanced competency in Python Programming.



Approx. 3 months to complete

Suggested 4 hours/week



English

Subtitles: English, French, Portuguese (European), Russian, Spanish

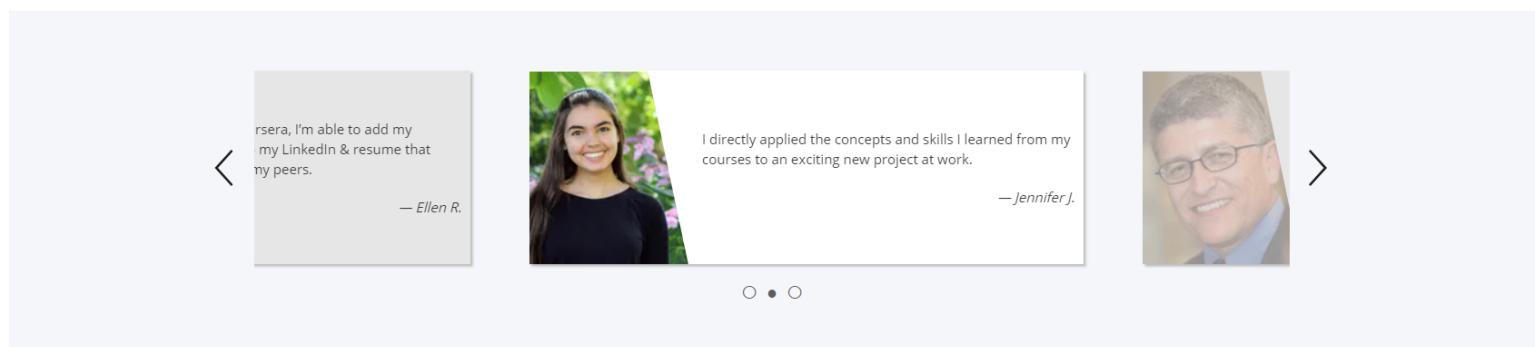
About this Specialization

28,723 recent views

This 3-course Specialization from Google Cloud and New York Institute of Finance (NYIF) is for finance professionals, including but not limited to hedge fund traders, analysts, day traders, those involved in investment management or portfolio management, and anyone interested in gaining greater knowledge of how to construct effective trading strategies using Machine Learning (ML) and Python. Alternatively, this program can be for Machine Learning professionals who seek to apply their craft to quantitative trading strategies. By the end of the Specialization, you'll understand how to use the capabilities of Google Cloud to develop and deploy serverless, scalable, deep learning, and reinforcement learning models to create trading strategies that can update and train themselves. As a challenge, you're invited to apply the concepts of Reinforcement Learning to use cases in Trading. This program is intended for those who have an understanding of the foundations of Machine Learning at an intermediate level. To successfully complete the exercises within the program, you should have advanced competency in Python programming and familiarity with pertinent libraries for Machine Learning, such as Scikit-Learn, StatsModels, and Pandas; a solid background in ML and statistics (including regression, classification, and basic statistical concepts) and basic knowledge of financial markets (equities, bonds, derivatives, market structure, and hedging). Experience with SQL is recommended.

Applied Learning Project

The three courses will show you how to create various quantitative and algorithmic trading strategies using Python. By the end of the specialization, you will be able to create and enhance quantitative trading strategies with machine learning that you can train, test, and implement in capital markets. You will also learn how to use deep learning and reinforcement learning strategies to create algorithms that can update and train themselves.



How the Specialization Works

Take Courses

A Coursera Specialization is a series of courses that helps you master a skill. To begin, enroll in the Specialization directly, or review its courses and choose the one you'd like to start with. When you subscribe to a course that is part of a Specialization, you're automatically subscribed to the full Specialization. It's okay to complete just one course — you can pause your learning or end your subscription at any time. Visit your learner dashboard to track your course enrollments and your progress.

Hands-on Project

Every Specialization includes a hands-on project. You'll need to successfully finish the project(s) to complete the Specialization and earn your certificate. If the Specialization includes a separate course for the hands-on project, you'll need to finish each of the other courses before you can start it.

Earn a Certificate

When you finish every course and complete the hands-on project, you'll earn a Certificate that you can share with prospective employers and your professional network.



There are 3 Courses in this Specialization

COURSE

Introduction to Trading, Machine Learning & GCP

1

★★★★★ 4.0 572 ratings • 157 reviews

In this course, you'll learn about the fundamentals of trading, including the concept of trend, returns, stop-loss, and volatility. You will learn how to identify the profit source and structure of basic quantitative trading strategies. This course will help you gauge how well the model generalizes its learning, explain the differences between regression and forecasting, and identify the steps needed to create development and implementation backtesters. By the end of the course, you will be able to use Google Cloud Platform to build basic machine learning models in Jupyter Notebooks.

To be successful in this course, you should have advanced competency in Python programming and familiarity with pertinent libraries for machine learning, such as Scikit-Learn, StatsModels, and Pandas. Experience with SQL is recommended. You should have a background in statistics (expected values and standard deviation, Gaussian distributions, higher moments, probability, linear regressions) and foundational knowledge of financial markets (equities, bonds, derivatives, market structure, hedging).

COURSE

Using Machine Learning in Trading and Finance

2

★★★★★ 3.9 237 ratings • 56 reviews

This course provides the foundation for developing advanced trading strategies using machine learning techniques. In this course, you'll review the key components that are common to every trading strategy, no matter how complex. You'll be introduced to multiple trading strategies including quantitative trading, pairs trading, and momentum trading. By the end of the course, you will be able to design basic quantitative trading strategies, build machine learning models using Keras and TensorFlow, build a pair trading strategy prediction model and back test it, and build a momentum-based trading model and back test it.

To be successful in this course, you should have advanced competency in Python programming and familiarity with pertinent libraries for machine learning, such as Scikit-Learn, StatsModels, and Pandas. Experience with SQL is recommended. You should have a background in statistics (expected values and standard deviation, Gaussian distributions, higher moments, probability, linear regressions) and foundational knowledge of financial markets (equities, bonds, derivatives, market structure, hedging).

COURSE

Reinforcement Learning for Trading Strategies

3

★★★★★ 3.7 144 ratings • 36 reviews

In the final course from the Machine Learning for Trading specialization, you will be introduced to reinforcement learning (RL) and the benefits of using reinforcement learning in trading strategies. You will learn how RL has been integrated with neural networks and review LSTMs and how they can be applied to time series data. By the end of the course, you will be able to build trading strategies using reinforcement learning, differentiate between actor-based policies and value-based policies, and incorporate RL into a momentum trading strategy.

To be successful in this course, you should have advanced competency in Python programming and familiarity with pertinent libraries for machine learning, such as Scikit-Learn, StatsModels, and Pandas. Experience with SQL is recommended. You should have a background in statistics (expected values and standard deviation, Gaussian distributions, higher moments, probability, linear regressions) and foundational knowledge of financial markets (equities, bonds, derivatives, market structure, hedging).

Instructors**Jack Farmer**Curriculum Director
New York Institute of Finance
 32,835 Learners
 7 Courses
**Ram Seshadri**Machine Learning Consultant
Google Cloud Platform
 26,239 Learners
 3 Courses
Offered by**Google Cloud**

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**New York Institute of Finance**

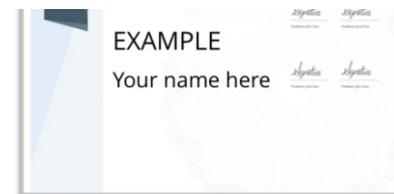
The New York Institute of Finance (NYIF), is a global leader in training for financial services and related industries. Started by the New York Stock Exchange in 1922, it now trains 250,000+ professionals in over 120 countries. NYIF courses cover everything from investment banking, asset pricing, insurance and market structure to financial modeling, treasury operations, and accounting. The institute has a faculty of industry leaders and offers a range of program delivery options, including self-study, online courses, and in-person classes. Its US customers include the SEC, the

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› Can I just enroll in a single course?

› Is financial aid available?

› Can I take the course for free?

› Is this course really 100% online? Do I need to attend any classes in person?

› Will I earn university credit for completing the Specialization?

› What background knowledge is necessary?

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