Algorithmic Trading

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FinTech
Lesson 15.2

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Algorithmic Trading with Machine Learning

Algorithmic Trading with Machine Learning

Until now, we generated signals, backtested our trading strategies, and evaluated the results. Now, it's time to incorporate intelligence and automation into our trading strategies by using machine learning.

What are the advantages of using machine learning in algorithmic trading strategies?

Machine Learning

Machine learning systems can evaluate multiple factors that influence investment decisions (such as changing economic, political, and fundamental company conditions) even more efficiently than humans—resulting in more accurate trading decisions.

Additionally, machine learning systems can quickly analyze the data that generates the trade signals used to both enter and exit a trade at its most profitable price points.

Machine Learning

The use of machine learning models makes trading decisions more efficient.

Once we find the right features and adapt the correct model, we can delegate the rest of the trading process to automation.

We can create new trading strategies more easily. That's because machine learning algorithms work by getting as much predictive information as possible from each variable that the model includes.

Backtesting with Options

Backtesting with Options

Backtesting and trading options is somewhat more complex than equities. While options are derivatives that are based on equities, there are many more of them.

There are more than 20,000 unique options trading on Google at any given time, for example.

Implied Volatility

The implied volatility is a standardized measure of the price of all the options currently trading on the stock. In that way, it's a way to backtest options on a stock, but using only a single column.

Instructor Demonstration
Building a Simple Trading Algorithm
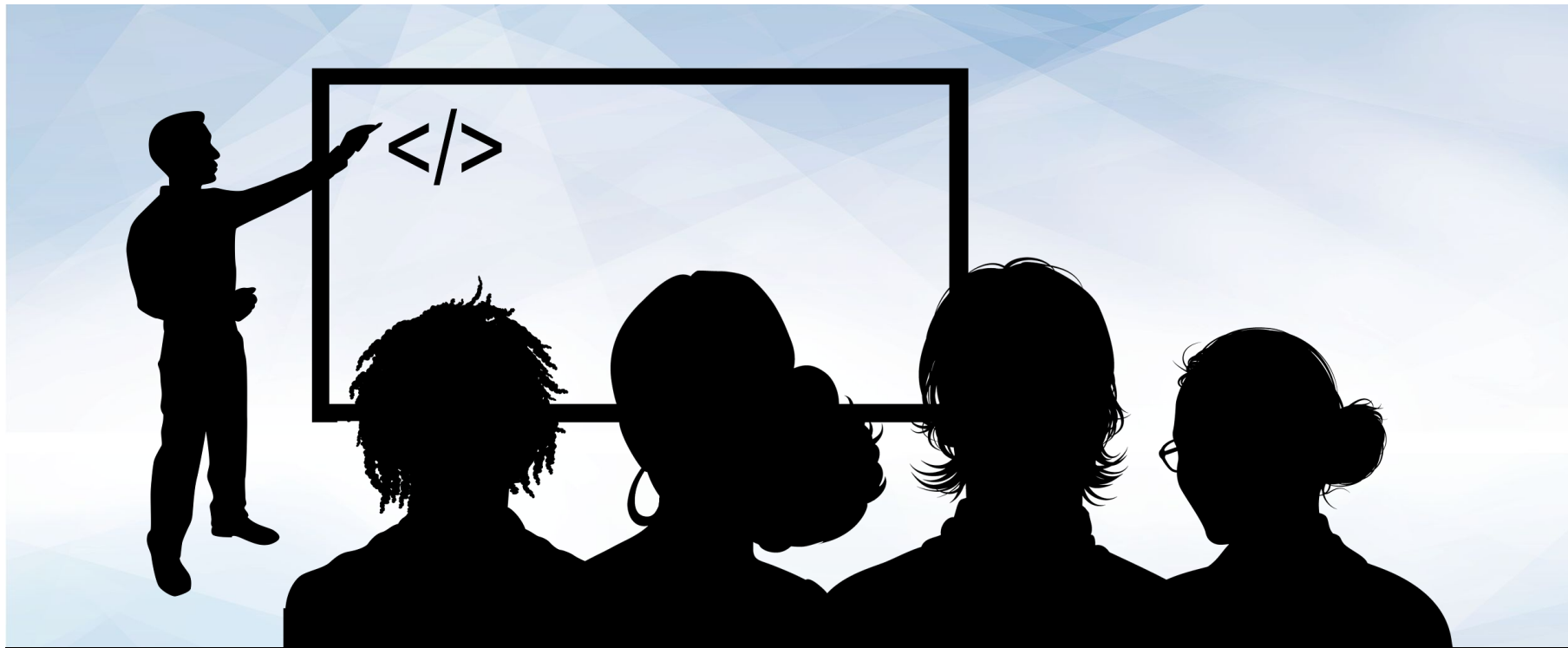
Activity: Evaluating Algorithmic Strategy Performance

In this activity, students will utilize the various performance metrics to consider the performance and investment tradeoffs to various algorithmic strategies.

Suggested Time:
15 Minutes

Time's Up! Let's Review.

Instructor Demonstration
Data Preparation for a Machine Learning Trading Strategy

Activity: Preparing Data for a Machine Learning Trading Strategy

In this activity, students will prepare training and testing data for fitting a machine learning-powered trading algorithm.
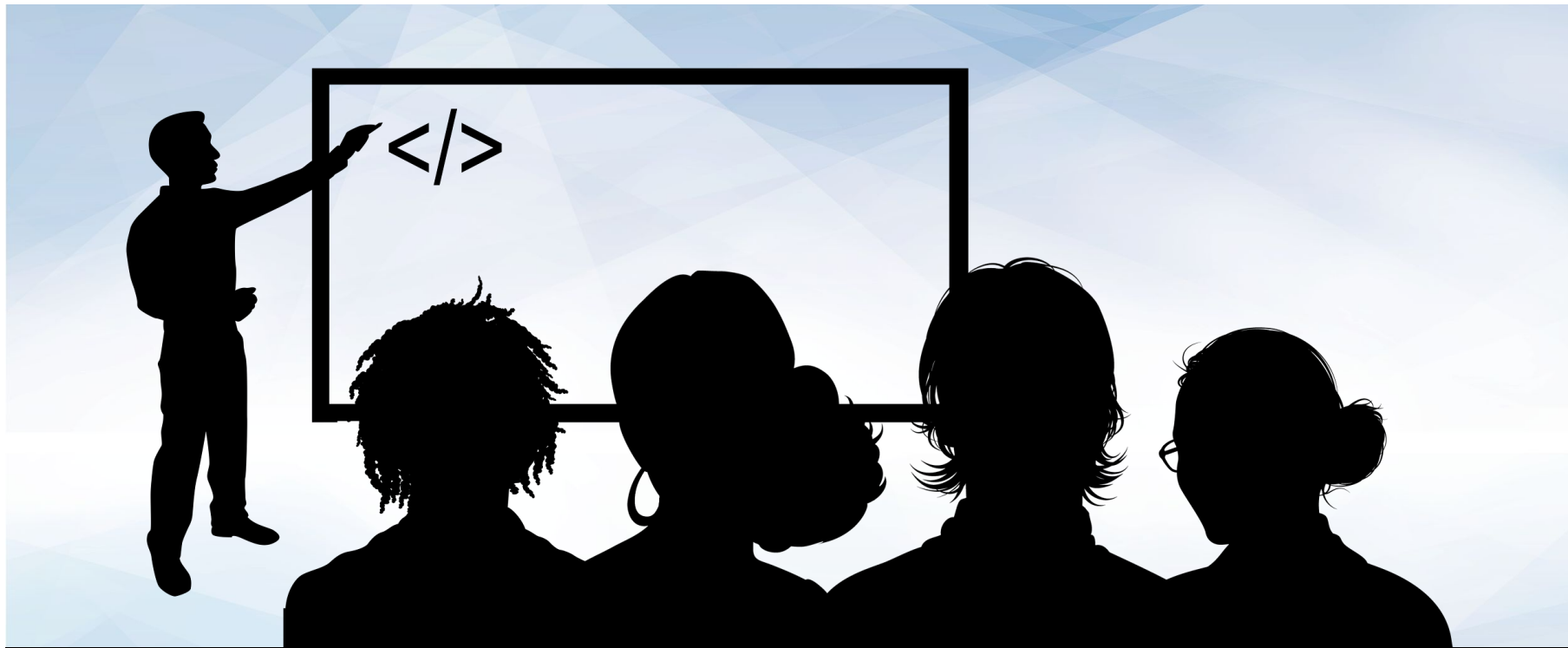
Suggested Time:
15 Minutes

Time's Up! Let's Review.

Time's Up! Let's Review.

Instructor Demonstration
Use Machine Learning in a Trading Strategy

Activity: Using a New Machine Learning Classifier for Algorithmic Trading

In this activity, students will evaluate how our earlier trading strategy behaves when it uses a different machine learning classification model.

Time's Up! Let's Review.

Instructor Demonstration
Going Live with Algo Trading

Questions?