



# AI in Trading Pro Course

Enroll here - <https://www.augmentedstartups.com/ai-in-trading-course>

## Module 0: Welcome to the Course

- 0.1: Welcome to the course
- 0.2: How to get Help
- 0.3: Benefit & Certification
- Tips for Successfully Completing the Course
- 0.4: Course Overview

## Module 1: Introduction to AI in Trading

- 1.1: Overview of AI in Financial Markets
  - 1.1: State of the Art techniques and algorithms for trading bots.
  - 1.2: How can a trading bot compare to a human broker? [Theory]
- 1.2: Python for Trading: Essential Libraries
  - 1.2.1: APIs [Theory and Practical]
  - 1.2.2.1: Installations [Theory and Practical]
  - 1.2.2.2: Installations [Theory and Practical]
- 1.3: Fundamentals of Trading Bots
  - 1.3: Fundamentals of Trading Bots
- 1.4: Risk Management in AI Trading
  - 1.4: Risk Management in AI Trading
- Module 1 Quiz

## Module 2: Building Your First Trading Bot

- 2.1: Data Acquisition Techniques
  - 2.1.1: Data Acquisition via API. [Practical] (Part 1)
  - 2.1.1: Data Acquisition via API. [Practical] (Part 2)
  - 2.1.1: Data Acquisition via API. [Practical] (Part 3)
  - 2.1.2: Plot the data using Plotly. [Practical] (Part 1)
  - 2.1.2: Plot the data using Plotly. [Practical] (Part 2)
  - 2.1.3: Get your own Alpaca Paper Money API key for simulated trading! [Practical]
- 2.2: Basic Algorithm Design and Testing



**2.2: Let us code a basic DNN and train on custom data [Theory and Practical] (Part 1)**

**2.2: Let us code a basic DNN and train on custom data [Theory and Practical] (Part 2)**

**2.2: Let us code a basic DNN and train on custom data [Theory and Practical] (Part 3)**

**2.3: Backtesting and Performance Analysis**

**2.3.1: Save the model and predict on hardcoded data. [Practical] (Part 1)**

**2.3.1: Save the model and predict on hardcoded data. [Practical] (Part 2)**

**Module 2 Quiz**

## **Module 3: Trading Analysis Techniques**

**3.1: Principles of Fundamental Analysis**

**3.1.1: Plotly Graph interpretation. (How do I read this thing?) [Theory and Practical]**

**3.1.2: Fundamental Analysis App Part 1**

**3.1.2: Fundamental Analysis App Part 2**

**3.1.2: Fundamental Analysis App Part 3**

**3.1.2: Fundamental Analysis App Part 4**

**3.1.2: Fundamental Analysis App Part 5**

**3.1.3: Fundamental Analysis Lab**

**3.2: Technical Analysis: Charts and Indicators**

**3.1.1: Candlestick charts. [Theory and Practical]**

**3.2.1 Technical Analysis App Part 1**

**3.2.1 Technical Analysis App Part 2**

**3.2.1 Technical Analysis App Part 3**

**3.3: Integrating Fundamental and Technical Analysis**

**3.3.1: How can decisions be made by reading this graph? [Theory]**

**Module 3 Quiz**

## **Module 4: Sentiment Analysis in Trading**

**4.1: Basics of Market Sentiment Analysis**

**4.1.1: What does sentiment analysis mean? [Theory]**

**4.2: Sentiment Analysis with NLP (LLM)**

**4.2.1: Can we use an LLM to make sentiment analysis? [Theory and Practical]**

**4.3: Integrating Sentiment into Trading Strategies**

**4.3.1: Why... why not? Sentiment is a good starting point... but that's about it. [Theory and Practical]**



- 4.3.2: Sentiment Analysis App Part 1
- 4.3.2: Sentiment Analysis App Part 2
- 4.3.2: Sentiment Analysis App Part 3
- 4.3.2: Sentiment Analysis App Part 4
- 4.3.2: Sentiment Analysis App Part 5
- 4.3.2: Sentiment Analysis App Part 6
- Module 4 Quiz

## Module 5: Deep Learning in Financial Markets

### 5.1: Introduction to Deep Learning Concepts

5.1.1: Just like in module 2, but let us focus in other DNN architectures (LSTM, CNN) [Theory]

5.1.2: Why Deep Learning and not Machine Learning? (How one differentiates from the other? Are they actually different?) [Theory]

5.1.3: Data preparation. (The most important part.) Building the Neural Net is easy! The dealbreaker comes with what am I going to feed it... and how. [Practical]

### 5.2: Time Series Prediction with LSTMs

5.2.1: Let's build and train a simple LSTM model on custom data [Practical]

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 1

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 2

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 3

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 4

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 5

5.2.2: Time for data forecasting! [Practical] - Coding an LSTM Part 6

### 5.3: Pattern Recognition with CNNs

5.3.1: Pattern Recognition with CNN

5.3.2: Let's add some Conv1D layers... [Practical]

5.3.2: And Conv2D layers as well! [Practical]

### 5.4: Anomaly Detection using Autoencoders

5.4.1: Note: I have used autoencoders and results are not very promising, however autoencoders can be reviewed as well.

5.4.2: What is an autoencoder? [Theory]

5.4.3: How to build an encoder on any Neural Net architecture. [Practical]

5.4.4: How to process that encoder. [Practical]

5.4.5: How to decode the results. [Practical]

5.4.6: Autoencoder use cases. [Theory and Practical]

5.4.7: Let's try data forecasting with the autoencoders. [Practical]

### 5.5: Synthetic Data Generation with GANs

5.5.1: Data Generation with GANs

### 5.6: What's Next?



## 5.6: What's Next? Module 5 Quiz

## Module 6: Reinforcement Learning in Trading

### 6.1: Basics of Reinforcement Learning

6.1.1: Agents [Theory]

6.1.2: Environment [Theory]

6.1.3: State [Theory]

6.1.4: Action [Theory]

6.1.5: Reward [Theory]

6.1.6: Policy [Theory]

6.1.1: Setting Up Forecasts Library part 1

6.1.2: Setting Up Forecasts Library part 2

### 6.2: Building RL-based Trading Strategies

6.2.1: When is a good time to buy, or when to sell what I have bought?  
[Theory and Practical]

6.2.2: Oops! Something unprecedented happened on the market! I think I  
will stick with what I bought and sell it later... [Theory and Practical]

6.2.1: Preparing Data for Reinforcement Learning using AI agents and  
Word Embeddings Part 1

6.2.2: Preparing Data for Reinforcement Learning using AI agents and  
Word Embeddings Part 2

6.2.3: Preparing Data for Reinforcement Learning using AI agents and  
Word Embeddings part 6

### 6.3: Advanced RL: DQN and PPO

6.3.1: Q-learning. [Practical]

6.3.2: DQN: [Practical]

6.3.3: PPO: [Practical]

6.3.4: Let us train something! [Practical]

## Module 7: Leveraging Large Language Models

### 7.1: Introduction to ChatGPT in Finance

7.1.1: How can the new OpenAI assistance aid our trading bot? [Theory and  
Practical]

7.1.2: What other LLM could be used? [Theory]

7.1.3: Getting your OpenAI API key. [Practical]

### 7.2: Developing Custom Financial Bots

7.2.1: Let us build a chatbot that can read anything. [Practical]

7.2.2: Let us get tons of news form our APIs and let our chatbot feed on  
that news. (News will be related to either direct or indirect impact on  
stocks, cryptocurrency, and forex.) [Practical]



**7.2.3: Use OpenAI Vision to visualize the full spectrum of a traditional trading graph. [Practical]**

**7.2.4: Both point B and Point C will be used to enhance sentiment analysis. [Practical]**

**7.3: LLMs for Regulatory Compliance**

**7.3.1: Given the output data form LSTM, CNN models [Practical]**

**7.3.1: Full spectrum of sentiment analysis [Practical]**

**7.4: Custom Sources**

**7.4.1: How many platforms exist?**

**7.4.2: Switching between outlets. [Theory and Practical]**

**7.5: Hybrid Models: LLMs and Traditional AI**

**7.5.1: What would happen if the LLM result was in a closed loop (Almost like a PID controller). [Theory]**

## **Module 8: Optimization and Yield Maximization**

**8.1: Techniques in Model Optimization: best learning rates for training**

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**8.2: Prompt Engineering for Prompt Templates in Langchain**

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**8.3: Plot our LSTM CNN models**

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**8.4: Ablation Studies for Performance Improvement**

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**8.5: Same architecture, different tensor shapes in data**

**8.5: Same architecture, different tensor shapes in data**

**8.6: Different architecture and different tensor shapes**

**8.6: Different architecture and different tensor shapes**

**8.7: Tests**

**8.7: Tests**

## **Module 9: Best Practices and Real-World Applications**

**9.1: Developing Optimal Trading Strategies**

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**9.2: Fully trading bot strategies**



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Fusing AI Innovation & Next-Gen Education

**9.2: Fully trading bot strategies**

**9.3: Train our bot on human strategies**

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**9.4: Switching between Paper Money and Real Money**

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**9.5: Comprehensive AI Trading Bot Project**

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