Beyond machine learning … to machine thinking

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D4: Machine Thinking
2020/02/14

Abstract: The purpose of this project is to experiment with deep reinforcement learning technologies to see if we can create stable and profitable Bitcoin trading bots.

1. Background (Review of Related Literature):

Machine learning is giving computers the ability to learn without being explicitly programmed, but the machines are still operating within certain parameters. With machine thinking, the machines break out of those parameters, taking advantage of network connectivity to broaden their perception of their environment and how to adapt to it. Machine thinking is used to many fileds such as business and medicine.

2. Introduction to the Project:

These self-thinking machine algorithms are built on neural networks and machine learning technology. Smart algorithms deeply analyze the market and adapt through its changes. In this project I am going to create deep reinforcement learning agents that learn to make money trading Bitcoin.

3. Introduction to the Dataset:

In this project I will be using OpenAI's gym and the PPO agent from the stable-baselines library, a fork of OpenAI's baselines library.

4. Plan:

Milestone 1: Background research - Recurrent-Reinforcement-Learning
Milestone 2: Create a environment for our agent to learn from and apply the algorithm
Milestone 3: Train to learn a profitable trading strategy

Reference:
Moody, J. and Saffell, M.: Reinforcement learning for trading. (1998)
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