Artificial Brilliance - STOCK MARKET

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Artificial Intelligence Stock Market Tool

Introduction

Imagine a hybrid crowd source stock trading tool for financial advisors/planners/investors and other professionals. This software as a service (SaaS) platform helps these professionals generate returns by providing them insights into stocks they are tracking through amazingly beautiful big data visualizations.

However, behind the scenes this tool also powers our own deep learning neural net artificial intelligence system that actually conducts high frequency trading (HFT) for our own accounts.

The public facing tool and the back end trading system doesn't have to be limited to trading stocks but could be applied to bitcoin exchanges as well.

What It Does

The tool will track social media conversations and web chatter about publically traded companies and their products and cross reference that information by analyzing search engine keyword trends for keywords related to these companies.

The alpha version of the tool will graph sentiment analysis on a chart and cross-references an overlay of the stock movements for the same company. Sentiment is the tone or feeling of the words used in the text. Typically the tone ratings are Positive, Neutral or Negative. This is useful to these professionals by itself.

The beta stage is where we take all the collected data and feed it into an Artificial Intelligence system for creating exchange prediction systems. We then begin experiments with small trades.

The official version will be an amazingly insightful blend of hybrid professional crowdsourcing gamification with a backend trader that automates everything.

The Demand

Everyone in public markets look for an informational advantage. Information is power. Having artificial intelligence systems providing them with an edge, as long as it's accurate and SEC compliant, will be in high demand.

The Competition

One tool similar to this has already been demo-ed. It analyzed something like 5 million tweets and cross-referenced it with stock movements. The programmers who made it claimed it had an 86% accuracy rating when they would create a prediction for a specific date and company and the referenced that data with the actual stock movements the next day. See:

http://www.wired.com/wiredscience/2010/10/twitter-crystal-ball/

& http://www.reuters.com/article/2012/02/16/us-twitter-stockpredictions-idUSTRE81F21I20120216

Since this time, there have been a large number of startups snapped up and acquired by hedge funds and trading firms. In almost all cases, the systems are rumored to have generated hundreds of millions and even billion within the first few years of implementation.

Our Advantage

Beside being able to access historical and real time social media chatter, we have heavy experience in SEO, search volume trends and other statistics relevant to what people are searching for in Google, Bing, Yahoo and other search engines.

If we combine market data, trading data, etc. with social media chatter, blog chatter, news reports, search trends and other data such as traffic changes and link accumulation, we can provide an Artificial Intelligence system with potentially far more accurately relevant information than those who are working on similar products like Grok as we speak.

Importantly, we can track the number of social media links, blog links and news links a company's website accumulates due to chatter/buzz. We can analyze the text surrounding the link for further sentiment analysis. Tracking how the web is reacting to the actual chatter is not being done by HFT systems that we know of.

We can then add real time survey automation. We can utilize paid Google Surveys, Mechanical Turk and other providers that allow programmatic access to their platforms for survey collection.

Example Use Case:

An example might be that bad press has surfaced about Microsoft again. Our tool charts a 60% negative sentiment tone for web and social media chatter for keywords related to Microsoft. We track several spikes in search trends related to them as well and they have a 70% negative tone. We chart this trend over a period of time and graph it on a chart.

Tools:

We have a web crawler built for recording social media conversations and web chatter. We also ingest data from many public information sources as well as open APIs. We have the programming talent to make this more advanced and scalable for the size of this project.

We have several semi-successful prediction tools already built.

One is a baby name prediction tool that parents can use to get a list of names that have real meaningful relationship to them and the meaning and history of their names.

Two is a song writers tool that allows a lyricist to paste their lyrics into a box and get an AI prediction as to which Artist their lyrics are most similar to and what song. It shows the title of the song and where it made it on the Billboard top #500.

Third is a SMS texting categorization tool that allows users who want to save a pre-typed message for easy use later to place it in the correct library. Later they can access their pre-saved messages based on library categorization.

Storage and Scale

Our system would run on an IBM Softlayer GPU super computing backbone. This system allows for scale to millions of users accessing the system simultaneously per day and the ability to ingest massive amounts of big data.

What would the tool be used for:

We want to overlay the sentiment chart with the matching company's real stock charts. This would allow us to graph trends over time and track correlations between chatter tone and stock movements for that company. This would be the first stage of the tool.

Advancement:

Second stage would be to take all that data and create a prediction model using artificial intelligence algorithms. The purpose would be for charting potential stock movement predictions on a visual chart.

Stock Movement Predictions

An important part of the chart would show a dotted line indicating a prediction of where the stock might be heading, whether up or down, depending on the recent chatter sentiment and the history of the tool's data concerning the market in general along with the history for that specific company.

Second Example:

Expanding on the first example, we could then cross-matrix Microsoft's actual stock movements at the same time as the web chatter is analyzed and charted. Our system gives us two graphs overlaying each set of data. Members can use that information to make their own judgments.

Paid members would be able to view actual stock predictions in addition to our overlay chart tool.

Disclaimer:

Of course we would have obvious disclaimers that they should not rely on our tool for financial decisions, etc. We would have our attorneys make sure we cover our butts for that stuff.

Increase Intelligence Via Feedback

There would be a section of the tool showing actual chatter for that day. Next to it would be a way for users of the tool to rate the chatter. We would use this info to make the tool smarter with a streaming update feature. "Steaming updates" means we can train the Artificial Intelligence system on the fly with user input.

Crowd Sourcing of Intelligence

If we got enough financial professionals providing feedback through the tool we will hit the sweet spot! It would allow us to use professionals in the industry to increase the accuracy of our predictions and sentiment analysis.

Why It Will Work

The stock markets, along with many parts of the financial sectors, are controlled by up and down swings in the stock trader's subjective opinion of whether the current news of the day will have a positive or negative effect on the stock valuation of a company. The stock market itself is a sentiment analysis of the opinions of the professionals who control the pieces of the system that make the prices go up and down. Our tool just gives members a jump on this analysis.

Incentivized Accuracy Improvement

We could have a free version of the tool designed as members-only web application. It would work off of an earned points system. The free members get a limited access version of the tool. They can only see the results for a stock or company after they have rated the chatter a certain number of times thereby increasing the accuracy of the sentiment analysis. Each time they want to check another company they will have to rate more chatter.

Actual Intelligence Correction

Each day our system could make stock predictions on a per minute or per second basis. Then we take the actual stock swings and use that data to train the AI prediction model for self correction. Over time the system will learn the rhythms and nuances of the stock swings for that particular company. So we will have an overall prediction system but the system would get more accurate over time for individual companies in the system.

AI Stock Tool Monetization

Of course we would have a paid versions that would not require many chatter ratings. We would want to have the paid professionals use a secondary rating

system that rated the overall accuracy of actual predictions or some other higher-level feedback system. Paid members could still use the chatter ratings to increase their membership level as explained below.

Multi-Tier Membership Levels

Our system could also record the ratings of individual members and cross-reference them with other members plus doubled checked by our base sentiment system. This could give us a way to classify the quality of members individually.

The more talented they are at making accurate predictions and sentiment ratings the higher level of access they receive in the system. The higher the level the more privileges they get, like making a higher volume of stock checks per day or allowing the system to track more companies at the same time for them, etc.

Fraud Prevention

We could use the member's access level to place weight on their sentiment ratings and predictions. The higher their accuracy/level the more weight our system places on their ratings and predictions.

This would automatically cause members who are inaccurate or just clicking buttons to get free predictions, etc. to lose their access over-time as they won't be able to maintain their access level.