

# Brain Machine Learning Stock Ranking of US Stocks

## Product Summary

Brain Machine Learning proprietary platform is exploited to generate a daily stock ranking based on the predicted future returns of a universe of 1000 US stocks on five time horizons: 2,3, 5, 10 and 21 days (other time horizons can be developed and tested upon request).

The model implements a voting scheme of machine learning classifiers that non linearly combine a variety of features with a series of techniques aimed at mitigating the well-known overfitting problem for financial data with a low signal to noise ratio.

Some examples of features are:

1. Time varying stock specific features like price and volume related metrics or fundamentals
2. Time fixed stock specific features like the sector and other database information
3. Market regime features such as volatility and other financial stress indicators
4. Calendar features representing possible anomalies, for example the month of the year

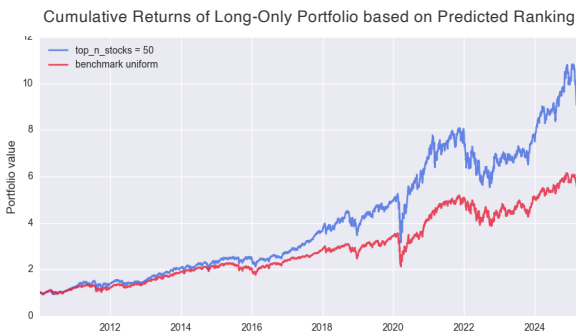
The stock universe is represented by the 1000 US stocks with the largest market cap and it is updated every year.

The model is trained and tested using a walking forward approach.

A history starting 1<sup>st</sup> January 2010 is available as free Trial for testing.

## Portfolio Based on Predictions

In the following graph we show the cumulative returns of a long-only portfolio (blue line) built using the top 50 stocks of the out-of-sample ranking over a time horizon of 5 days and with weekly rebalancing. For comparison, it is benchmarked against the entire universe of stocks with uniform weights (red line).



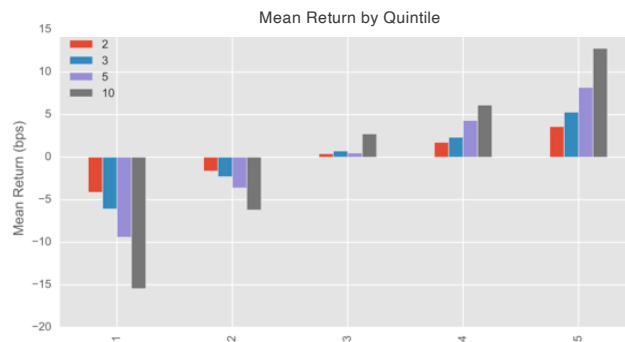
Last update: 10/04/2025

DISCLAIMER: the content of this presentation is not to be intended as investment advice. The material is provided for informational purposes only and does not constitute an offer to sell, a solicitation to buy, or a recommendation or endorsement for any security or strategy, nor does it constitute an offer to provide investment advisory or other services by Brain. Brain makes no guarantees regarding the accuracy and completeness of the information expressed in this document.

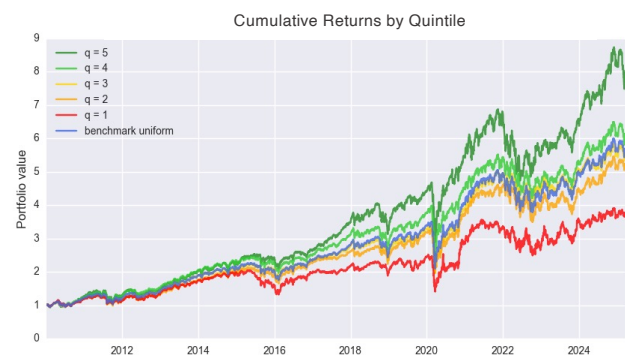
## Returns Analysis by Prediction Quintiles

The following graph shows the mean forward returns, over the available historical data, of the investing universe stocks on different time horizons (with respect to an equally weighted benchmark) as function of the predicted ranking quintile (5 days time horizon).

It clearly appears that the highest predicted ranking quintile corresponds to the highest average forward return, and vice versa the lowest prediction quintile corresponds to the most negative average forward return following the characteristic “ladder shape”.



A portfolio including the stocks with the most positive prediction (top quintile, dark green line) provides, over the available historical data, a larger cumulative return than a portfolio composed of the stocks with most negative prediction (bottom quintile, red line). The blue line represents the full stock universe with uniform weights.



## Contacts

BRAIN is a Research Company that develops proprietary signals based on alternative data and algorithms for investment strategies on financial markets.

- EMAIL: [contact@braincompany.co](mailto:contact@braincompany.co)
- WEB: <https://braincompany.co>