StockPick

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"Enable The Individual Investor To Make Better Long-Term Equity Decisions"

WHAT ARE WE DOING AT StockPick

Problem

Problem 1 : Product Issues

Current AI/ Machine Learning efforts geared either towards trading (not long-term investments) or is not built for individual investors

Problem 2: Conceptual Profitability Issues

If there exists a service such as stock-rankings which help individual investors in making long-term decisions, they are **not transparent** or require a lot of prior market studying.
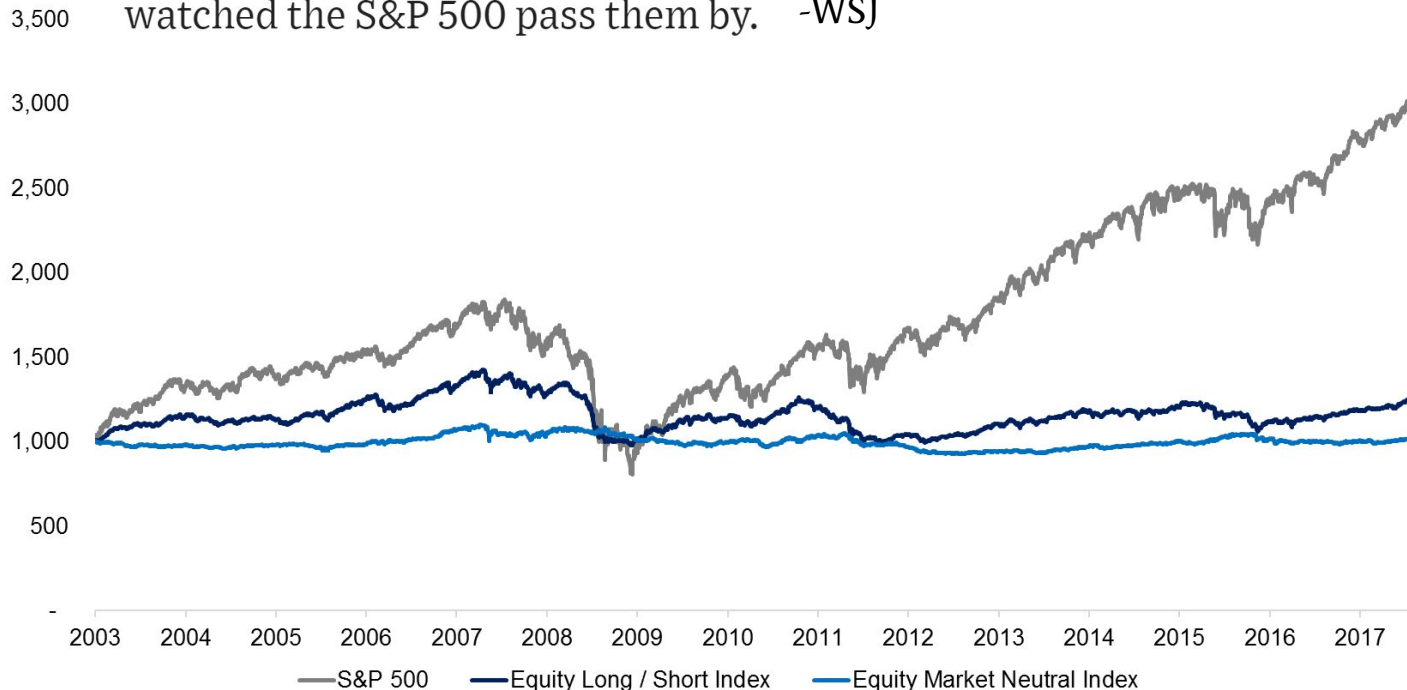
Current Gap

A product that's data-driven, automated, and transparent which assists individual investors in making sound and quick long-term investment strategies and gives insight as to what those decisions are based on.

Hedge Funds continue to underperform the SPX by 50%+

The failure of stock pickers to beat the benchmark is nothing new: 2021 was the 12th consecutive year in which the majority of actively managed funds of large-cap stocks watched the S&P 500 pass them by.   -WSJ

Chart axis labels: 3,500 · 3,000 · 2,500 · 2,000 · 1,500 · 1,000 · 500 · -

Years: 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Legend: —S&P 500 —Equity Long / Short Index —Equity Market Neutral Index
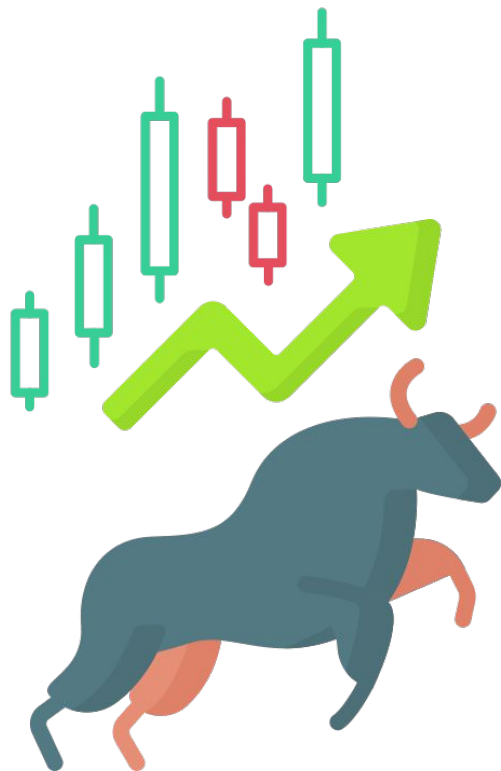
Solution

Generate a list of five stocks that will outperform the S&P 500 over any one year period that individual investors can use to outperform the market and hedge funds.

- One year expected stock appreciation and dividends representing total return for the stock as percent relative to invested capital.
- These percent returns are then compared to similar annualized returns from a specific index, and then ranked against all other stocks.

Competitive Market Insights

StockPickAI is working in a challenging market area — predicting long-term performance of stocks using fundamental and other market data — that has not been (publicly) addressed by many companies

-Trevor Anderson (Sequoia Capital)

-Joe Mirza, CFA (MIDS '22, HawksHead Capital)

Solution: Product Architecture

Inputs

Historical Prices of 7000+ Securities

Fundamental Ratios

Financial Statements (10-K, 10-Q, 8-K)

Models

XGBoost

Outputs

Ranked Stocks

Feature Analysis

Our Solution vs. Peers

	Us (StockPickAI)	Hedge Funds	Quant Funds
Outcome Variable	A Probability	Binary (Buy or Sell)	Binary (Buy or Sell)
Measurement of Success	Outperf SPX every year	Outperf SPX over 10 years	Outperf SPX over 10 years
Time period of prediction	1 year	10 years	Seconds/Minutes/Days
Main Indicators Used	Fundamental	Fundamental	Technical
Returns	≥1.5x SPX returns over 10 yrs	0.5x SPX returns over 10 yrs (HRFX Global HF Index)*	No measurable index equivalent
Transparent	Yes	No	No
Uses Machine Learning	Yes	No	Yes
Min Investment Req	$1200	$100,000 - $2M**	$1-10M (Citadel)**

User Guide / Example for Illustration

3 Easy Steps:
1. StockPickAI picks 5 stocks to buy every month (60 stocks per year). Investors buy those 5 stocks every month
2. Investors sell each "class" of 5 stocks one year after initial purchase.
3. Investors reinvest proceeds from the previous 5 stocks into the 5 new recommendations.

Example for Illustration:

On this date:	1/1/2020	2/1/2020	3/1/2020	4/1/2020	5/1/2020	6/1/2020	7/1/2020	8/1/2020	9/1/2020	10/1/2020	11/1/2020	12/1/2020	1/1/2021	2/1/2021	3/1/2021	4/1/2021	5/1/2021
StockpickAI Recs to Buy:	AAPL GOOGL FB NFLX ZM	AMZN SQ CMG UNP TSLA	...	...	...	...	...	...	...	...	...	...	WMT TGT POOL SPGI MCO	NET ETSY TEAM NOW CRM	...	...	...
Investor should Sell:	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	Nothing	AAPL GOOGL FB NFLX ZM	AMZN SQ CMG UNP TSLA	...	...	...

Results: ~20 Year Performance (2004 - 2022)

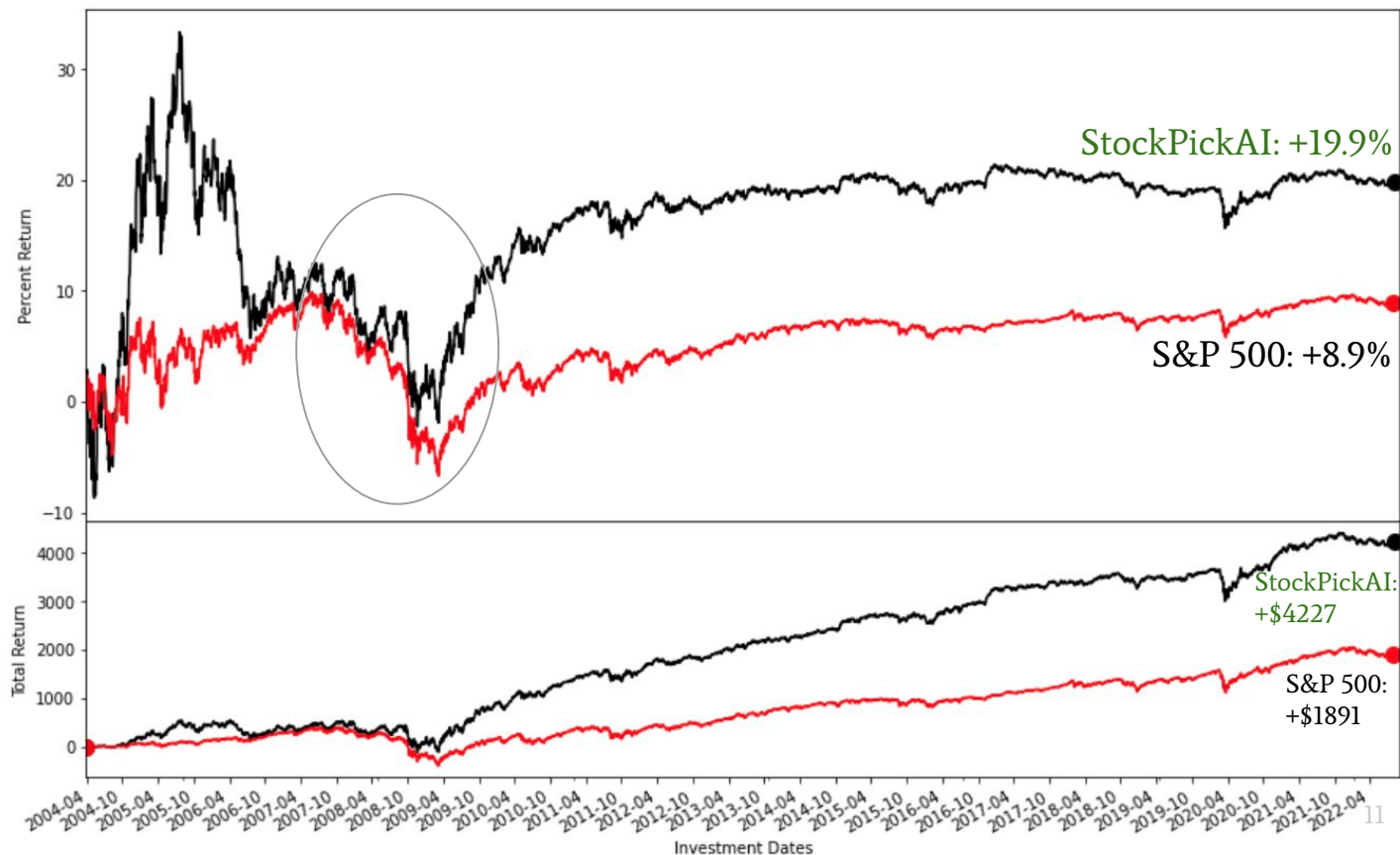StockPickAI
Avg Return:
+19.9% per year

S&P 500 Avg Return:
+8.9% per year

Assumes no
compounding.

Results also published
on <u>website</u>

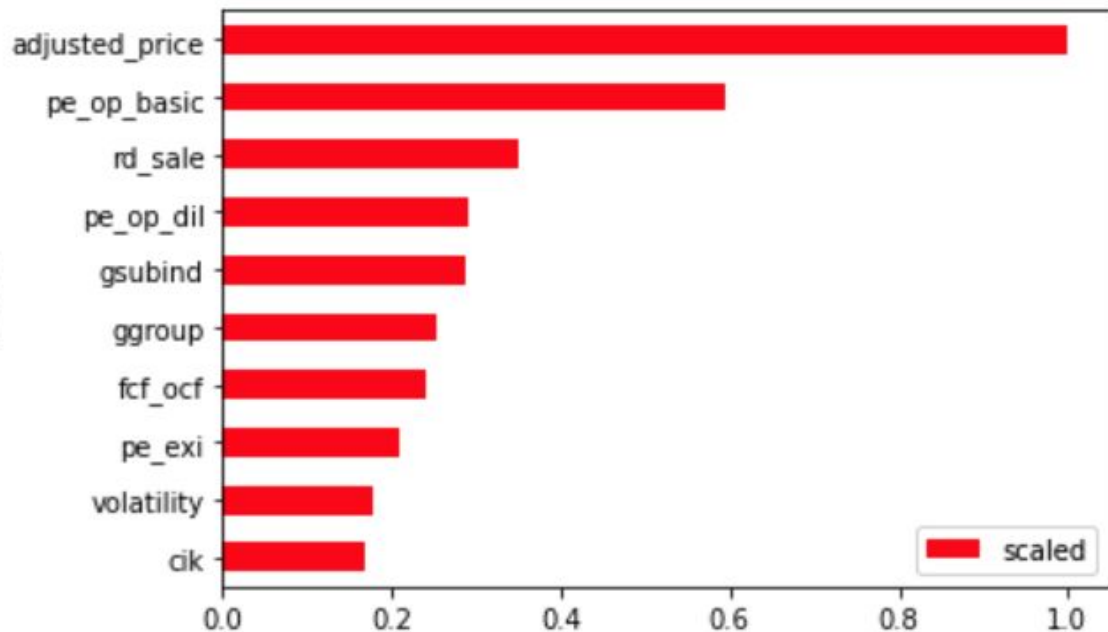# Results - Recession: 2008 Performance of Top 5 Picks

Ticker	Probability of outperf SPX	Actual % Performance
SHOO	60%	-2.50%
TPX	60%	-74.47%
NVDA	60%	-77.22%
CALM	59%	3.69%
CNC	59%	-28.72%
Average Return:		**-36.12%**
S&P 500:		-40.56%

Results - Recovery: 2009 Performance of Top 5 Picks

Ticker	Probability of outperf SPX	Actual % Performance
MRO	79%	17.49%
NBL	78%	48.01%
APH	77%	95.39%
WTI	76%	-15.32%
SM	76%	78.04%
Average Return:		45.68%
S&P 500:		26.52%

Results - Top 10 Features per SHapley Additive exPlanations*

- ~50 out of 130 features were significant
  - <1% difference in accuracy
  - 3x higher run time
- Top 10 Features are:
  - Historical Price (Momentum)
  - Price/Operating Earnings (pre-tax operating earnings)
  - R&D as a % of sales
  - GICS Sub-Industry
  - GICS Group
  - Free Cash Flow/Operating Cash Flow
  - Volatility of Stock

Results - Detailed

Data

- Daily stock prices, monthly fundamental ratios, quarterly & annual financial data from 1990.
  - 5400+ stocks with varied lifetime on US stock exchanges (market cap greater than $300MM)
  - ~19.5M rows (daily dataset) -> ~700K rows (monthly dataset) -> ~225K rows remain for training over 10 years, ~2K test/evaluation size for each month period.

Model

- XGBoost Classifier model using RandomSearchCV to identify top model with Shap Analysis
  - Identifies most important contributors to model performance over a 10 year period
  - Top features change over every 10 year period (business cycle is ~7-10 years)
  - Rolling 10 Yr Train Period, 1 Yr Validation Period, 1 Month Test Period to predict top stocks for next year
- Predict top 5 stocks that are expected to outperform the S&P 500 over the next year from current date
  - Based on probability derived from model

Feedback

"Knowing the critical factors for each stock's performance is essential for analysts and investors...StockPick's model with explainability for each stock pick would be *insightful for the experienced and novice stock picker.*"

-Trevor Anderson (Sequoia Capital)

"Where StockPickAI differentiates itself is the *ability to explain the choices offered to investors.* With a proven track record of performance with their models, a solution like theirs would be a valuable asset for retail, institutional, or fund investors."

-Joe Mirza, CFA (MIDS '22, HawksHead Capital)

Conclusion

- Product-market fit (ready for market)? ✓
  - Something people want to use? ✓
  - Productively addresses a specific need? ✓
- Transparent and explainable? ✓
- Net positive towards helping investors (ESG)? ✓
  - Equal access for all ✓
  - No redlining ✓
- Clear pathway to profitability? ✓

Thank You!

stockpickai.com

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