

# Callaghan Investments

## *2024 Goals*

- ✓ Stock and Cryptocurrency Exchange
- ✓ Expand Quantitative Analysis Team
- ✓ S.E.C approval of multiple ETFs

# Callaghan Investments

## *2025 Goals*

- Stock Screening Service

# Stock Screening Service

- *What is it?*
  - Recommend stocks to buy
  - Predictive Machine Learning

# Stock Screening Service

- *How does it work?*
  - Financial metrics and historical data
  - Estimated Earnings per Share (EPS) result

# Stock Screening Service

- *Why EPS?*
  - Strong financials, profitability, and future growth potential
  - 2.4% average price growth

# Stock Screening Service

- *Why Machine Learning?*
  - Identify patterns and predict future outcomes
  - Adds confidence

# Stock Screening Model: Process Overview

- Gather, clean, and prepare data
- Precision Value

# Stock Screening Model: Results

- Baseline Model
  - Precision Value: 72%
    - 962/1338 correct predictions



# Stock Screening Model: Results

- Final Model
  - Maximize Precision value
  - Adjust and tune
  - Increase threshold

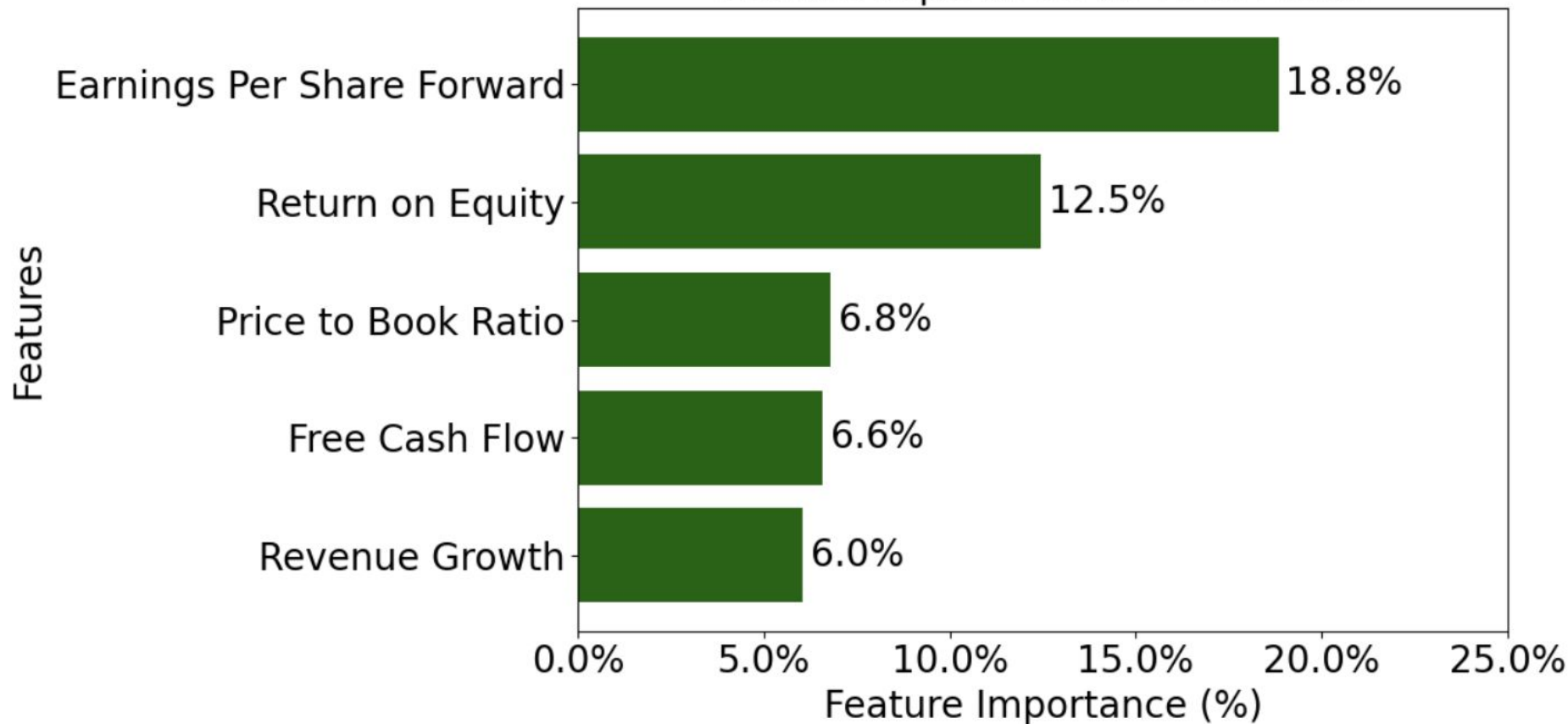
# Stock Screening Model: Results

- Final Model
  - Precision Value: 88%
    - 112/128 correct predictions

# Stock Screening Model: Best Financial Metrics

- Top 3 metrics and their percentage contribution
  - *Earnings Per Share Forward: 18.8%*
  - *Return on Equity: 12.5%*
  - *Price to Book Ratio: 6.8%*

Feature Importance for Final Model

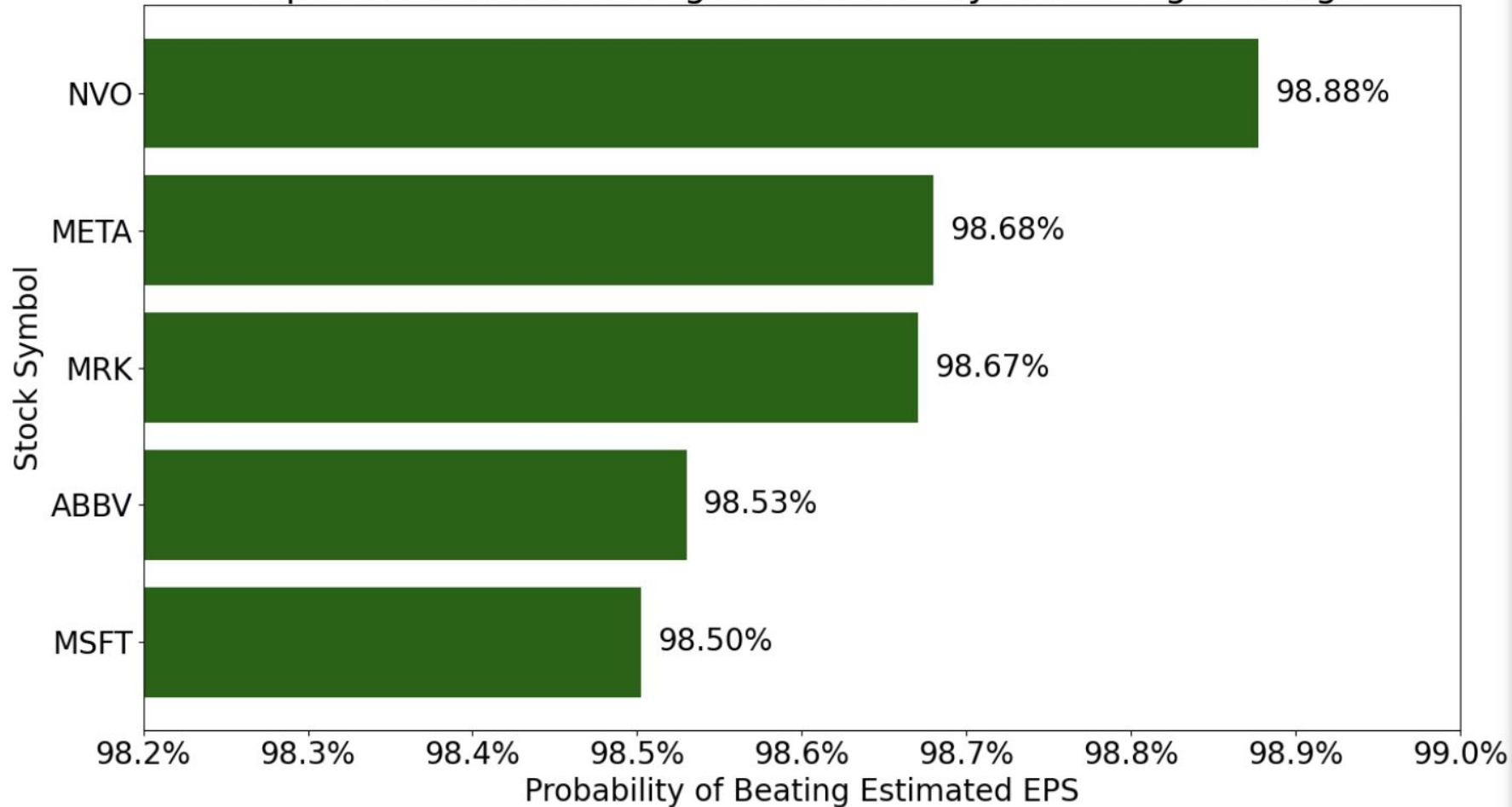


# Stock Screening Model: Top Stock Picks

Top 5 stocks with highest probability to  
beat their estimated EPS

- |                         |                         |
|-------------------------|-------------------------|
| 1. <i>NVO</i> : 98.88%  | 4. <i>ABBV</i> : 98.53% |
| 2. <i>META</i> : 98.68% |                         |
| 3. <i>MRK</i> : 98.67%  | 5. <i>MSFT</i> : 98.50% |

Top 5 Stocks with the Highest Probability of Beating Earnings



# Stock Screening Model: Limitations and Solutions

- Limited data
- Computational Capacity
- Beating estimated  $\text{EPS} \neq \text{price increase}$

# **Stock Screening Model:** **Future Actions**

- More financial metrics
- Technical Analysis indicators
- Try other ML algorithms
  - Neural Networks and Support Vector Machines



# **Callaghan Investments:** **Stock Screening Service**

## **Questions**