Mutual Funds Action Predictor

Our product platform

September 19, 2017

WHAT IS IT?

BUSINESS VALUE

SCREENSHOTS

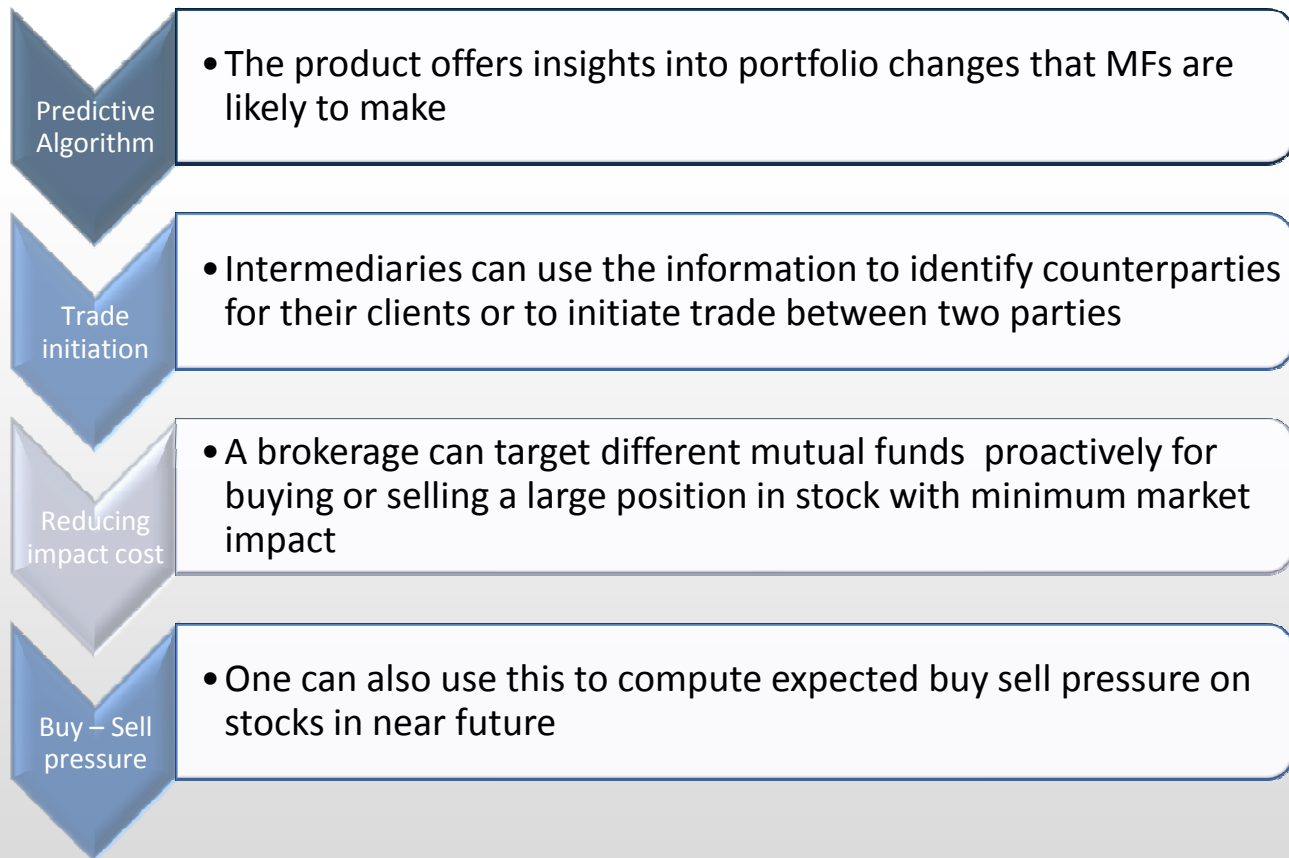MODELLING

RESULTS

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What does it offer?

The AlgoAnalytics Mutual Funds Product uses predictive algorithms to offer an insight regarding the portfolio changes mutual funds are likely to make

Intermediaries can use this information to identify counterparties for their clients or to initiate trade between two parties.

For a given equity scrip the application predicts which mutual funds are likely to sell or buy that particular stock over the next/current month.

Securities are sorted based on confidence of prediction.

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Business Value

Predictive Algorithm
- The product offers insights into portfolio changes that MFs are likely to make

Trade initiation
- Intermediaries can use the information to identify counterparties for their clients or to initiate trade between two parties

Reducing impact cost
- A brokerage can target different mutual funds proactively for buying or selling a large position in stock with minimum market impact

Buy – Sell pressure
- One can also use this to compute expected buy sell pressure on stocks in near future

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Fund Movement Prediction

http://mutualfunds.algoanalytics.com:8181/sharefunds

Fund Movement Prediction

http://mutualfunds.algoanalytics.com:8181/sharefunds

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Mutual Funds : Securities Buy/Sell

Predictions made in Jul '16 for Sep '16

BRITANNIA INDUSTRIES LTD. ▾   **SUBMIT**   Stock - ISIN Mapping   Schemes

BUYING FUND	PROBABILITY	%NAV	FUND AUM (CR)	SELLING FUND	PROBABILITY	%NAV	FUND AUM (CR)
IDBI Diversified Equity Fund(G)	High	1.534	443.39	JPMorgan India Balanced Advantage Fund-Reg(G)	High	0.266	266.72
Kotak Select Focus Fund(G)	High	2.274	4729.90	GS CNX 500(G)	High	0.372	60.99
LIC MF Growth Fund(G)	High	2.584	145.16	JPMorgan India Equity Income Fund-Reg(G)	High	0.220	417.19
Tata Ethical Fund(G)	High	2.598	465.32	SBI Magnum Multiplier Fund-Reg(G)	High	2.833	1580.41
ICICI Pru Balanced Advantage Fund(G)	High	0.610	11837.99	DSPBR Equity Fund-Reg(G)	High	2.559	2307.63

Interpretation of the Result:

- For a given equity scrip the application predicts which mutual funds are likely to sell or buy that particular stock over the next/current month.
- Securities are sorted based on confidence of prediction.
- Please select the stock from the drop down menu and then click submit.
- The list of top five mutual funds who are likely to buy/sell the selected stock is displayed.
- High probability has an accuracy of 73.5%, Medium probability has an accuracy of 61% and Low probability has an accuracy of 51%.
- The AUM displayed is as of May 16.

Disclaimer : This is not an advice to buy or sell, please use it at your own risk

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- Universe/ data preparation

  - 996 stocks are considered for prediction

  - MF schemes having AUM > 100 cr, 236 in total

  - Data set contains scheme details from Sept 2012.

  - Equity and Balanced schemes are includes; index and debt schemes excluded.

- Examples of features used:

Features	Market Parameters
• Volume • Percent NAV • Sector NAV	• Nifty Ratio • USD-INR • Inflation Ratio

- Predictions are made for all stocks that have been held by at least one scheme in the month before the previous month.

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Model building for prediction

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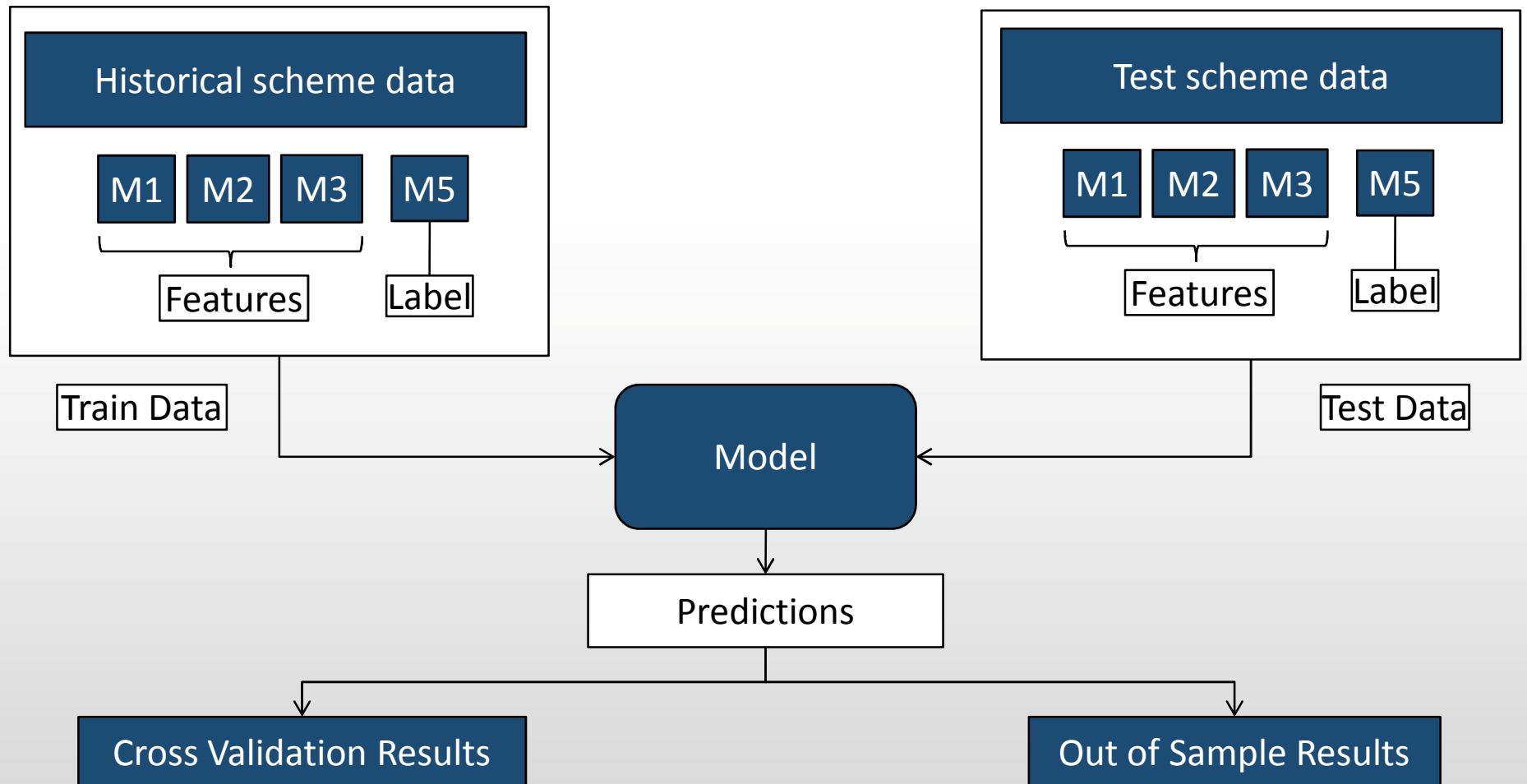
Performance Matrix

Total=69918	Predicted P	Predicted N	
Actual P	TP=10355	FN=5541	15896
Actual N	FP=8050	TN=12106	20156
Actual 0	17447	16419	33866
	35852	34066	

- True Positives (TP): Predicted P and they are actually P.
- True Negatives (TN): Predicted N, and they actually N.
- False Positives (FP): Predicted P, but they are actually N.
- False Negatives (FN): Predicted N, but they actually are P.
- P : Buying fund
- N : Selling fund
- 0 : No buy/no sell

Accuracy – How often is the classifier correct?

Accuracy = $\frac{TP+TN}{Total}$

Specificity = When it's actually N, how often does it predict N?

Specificity = $\frac{TN}{TN+FP}$

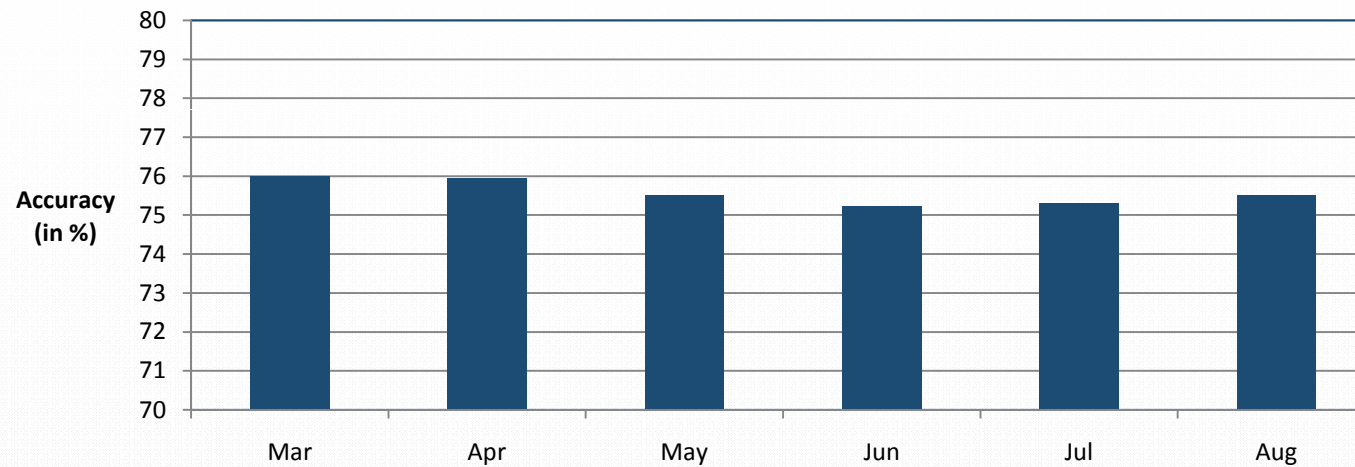Sensitivity = When it's actually P, how often does it predict P?

Sensitivity = $\frac{TP}{TP+FN}$

Note: This confusion matrix is for predictions for March 2016 - August 2016

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CV Results

Accuracy	Sensitivity	Specificity	Prevalence
75.58%	67.89%	68.87%	50.97%

Comparison of Month-wise Accuracy

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Accuracy	Sensitivity	Specificity	Prevalence
62.30%	65.14%	60.06%	44.09%

Comparison of Month-wise Accuracy

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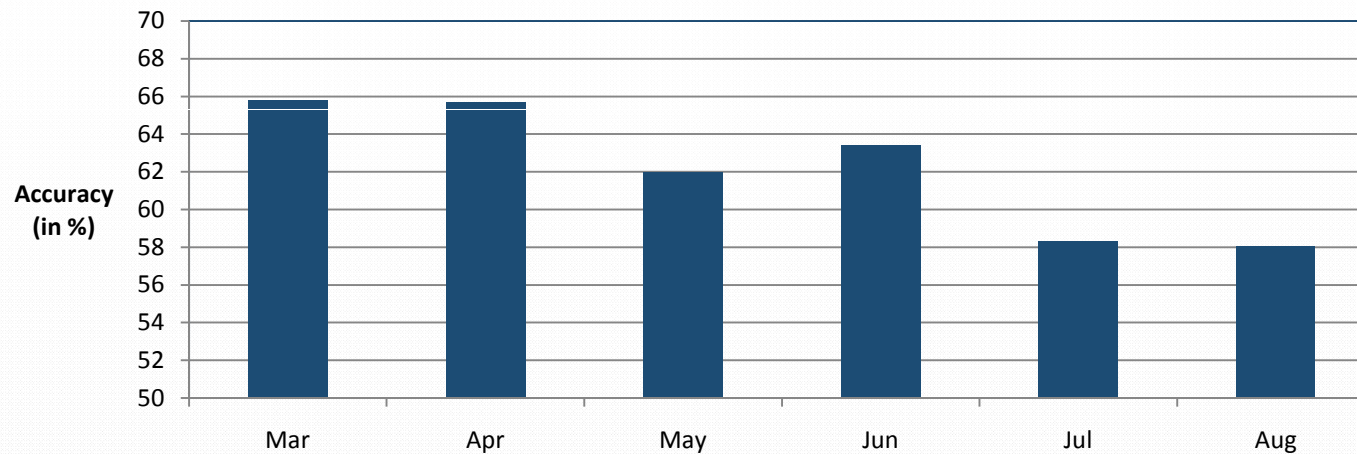
Bin-wise Calculation

- Bins have been created to determine how accuracy varies with prediction probability.

- The predictions have been put into 3 bins based on their probabilities and classified as High, Medium and Low.

- The accuracy, corresponding to a given probability and its classification are as follows:

	Probability	Accuracy
High	0.69	71.76%
Medium	0.59	52.87%
Low	0.50	43.28%

	Probability	Accuracy
High	0.71	76.54%
Medium	0.59	68.11%
Low	0.50	62.48%

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- Predictive algorithm offers insight into futuristic portfolio changes by a fund manager

- Brokerages can ensure minimum market impact into buying and selling of stocks

- Helps in identification of counterparty

- Can be used to calculate buying or selling pressure on a particular stock

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