

# Considerations in Programming A Trading Signal System

Presented by

EOTPRO Development

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# YOUR HOSTS

**Bill Dennis**  
CEO  
Head Trader

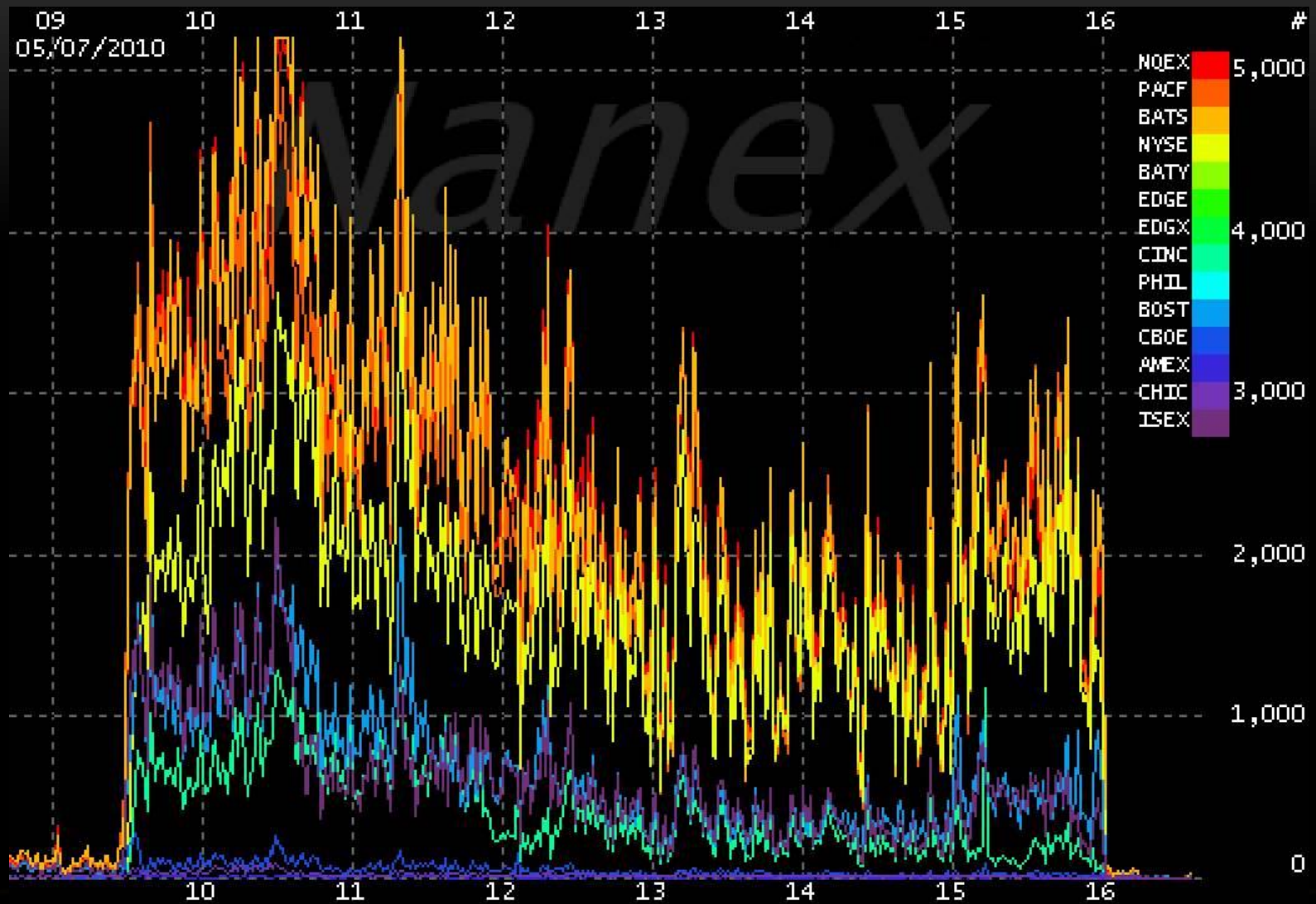


**Lorraine McGregor**  
VP Sales & Marketing

# Agenda

- How today's computerized trading has affected the reliability of traditional signals.
- How machine learning with different data sources affects latency, trade selection & timing.
- How to add a Machine Learning model to your trading signal system.
- The mindset changes needed to integrate Machine Learning into your intraday trading system.

# How HFT Affects Your Trading Signals



# Volatility From Computerized Trading May Cause Signals to Fire Late

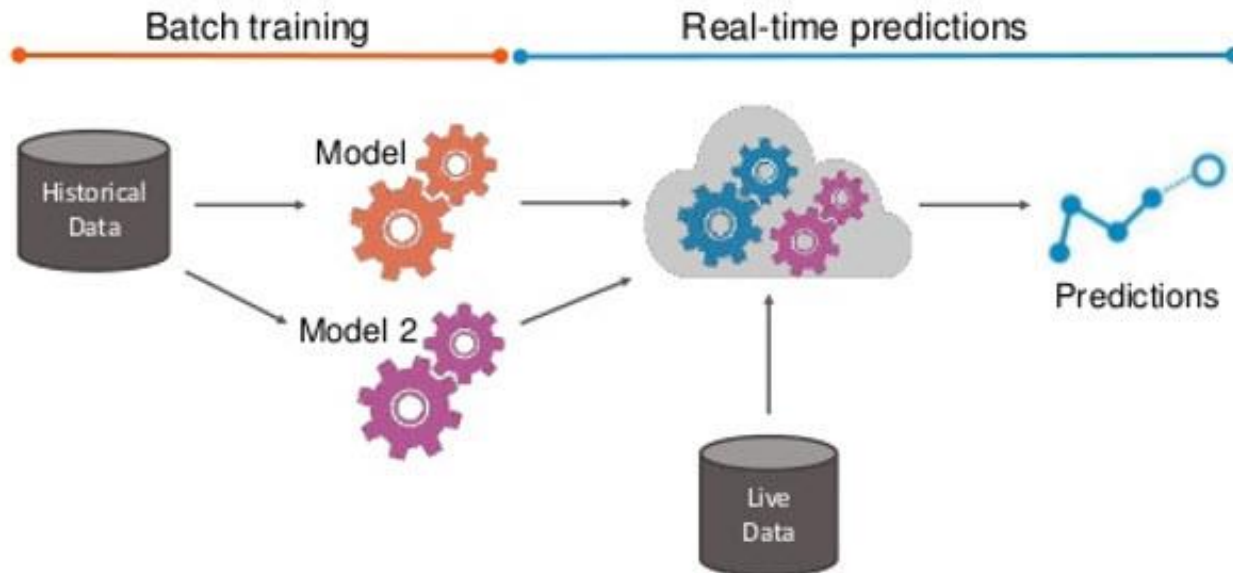


# Can Machine Learning Beat The Effects of Computerized Trading?

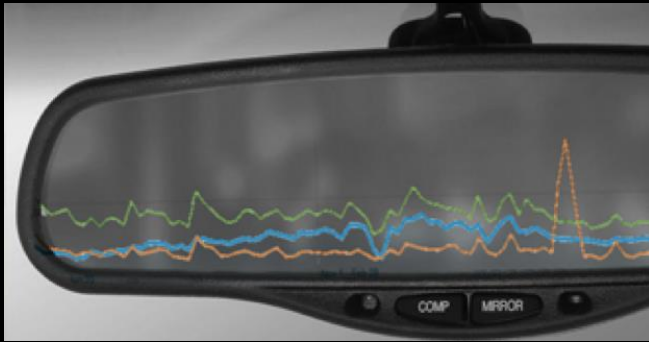
1. Not every Machine Learning model can!
2. Machine Learning is dependent on the data sources used.
3. And the value of that data to move the market.
4. And the relationships between data sets in the model.
5. And the questions you ask the model.
6. And the way you visually present the answer.
7. And how immediately actionable the answer is to a trader.

# What is Machine Learning?

## ML in production - 101



# The Goal of Machine Learning Is To Find Actionable Intelligence Before Computerized Trading Takes Over



Looking backward for patterns AFTER news is priced in... after HFT & Algo trigger

Traditional Technical Analysis



Looking forward to track news BEFORE it's priced in and before HFT & Algo trigger

DeepStreet EDGE Uses This Data Model



**EOTPRO**  
Developments Inc.



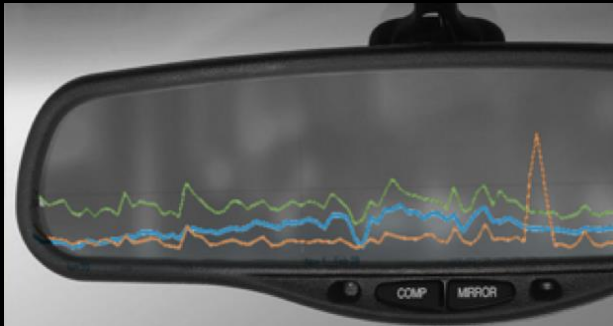
# Is Social Media & Sentiment Scoring Data Enough to Counter Computerized Trading?

Group FF: Falling Sentiment + Falling Price (Jan 8 to Jan 15)				
Symbol	Bullish %	Bearish %	Weekly Return	Last Close
WLL	11%	17%	-26%	\$ 5.72
CLVS	9%	22%	-23%	\$ 22.52
APC	8%	23%	-21%	\$ 32.02
QRVO	5%	8%	-18%	\$ 36.60
DDD	5%	7%	-16%	\$ 7.01
YELP	7%	16%	-15%	\$ 21.31
ESRX	2%	7%	-13%	\$ 74.59
P	7%	19%	-12%	\$ 9.45
MCK	3%	6%	-10%	\$ 165.00
GWPH	5%	12%	-9%	\$ 54.39
COP	7%	16%	-9%	\$ 39.36
LNKD	4%	9%	-9%	\$ 196.32
RIG	2%	15%	-8%	\$ 9.86
NFLX	7%	21%	-7%	\$ 104.04
BBY	4%	11%	-6%	\$ 27.11
AMZN	10%	13%	-6%	\$ 570.18
CAT	2%	14%	-5%	\$ 59.87
GS	5%	10%	-5%	\$ 155.61
SNY	10%	38%	-4%	\$ 38.61
PCLN	9%	13%	-4%	\$ 1,086.74

StockTwits @MKTSTK

# Is Historical Price and Fundamentals Data Enough to Counter Computerized Trading?

New mindset - trade before news is priced in.



NO!  
You need forward looking data sources...

Looking backward for patterns AFTER news is priced in... after HFT & Algo

Traditional Technical Analysis

Looking forward to track news BEFORE it's priced in and before HFT & Algo

15:55 REUTERS Massimo Zanetti Beverage USA Announces Closing Of Equity Stake Investment In Canada's Club Coffee

15:54 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:18.7; confidence:68; delta:9.25

15:53 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:18.37; confidence:68; delta:8.96

15:53 REUTERS Freeport's Chile-based El Abra mine, union seal wage agreement

15:53 SIUPDN Susquehanna maintained Silicon Motion Technology (SIMO) coverage with Positive and target \$48

15:52 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:18.16; confidence:68; delta:8.7

15:51 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:17.74; confidence:68; delta:8.37

15:50 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:17.93; confidence:68; delta:8.35

15:50 REUTERS IAITAM: U.S. Companies Need To Gear Up Now For New EU Data Privacy Regulations

15:49 EOTP YM: Market is Uncertain; stocks:IBM, VZ; impact:17.27; confidence:68; delta:7.89

15:49 REUTERS CIRT-ACE Mentor National High School Design Competition Celebrates 10 Yrs

15:49 REUTERS Express Scripts plans fiercer fight against sudden drug price hikes

15:48 EOTP YM: Marke

15:48 REUTERS Karma

15:47 MKR FIS Rises t

15:47 MKR FIS's 1Q16

15:47 EOTP YM: News

15:47 REUTERS Fitch I

15:46 MKR Will CF Inc

15:46 EOTP YM: News

15:45 MKR Earnings P

15:45 EOTP YM: Market is Uncertain; stocks:AAPL, IBM, VZ; impact:16.65; confidence:66; delta:4.88

15:45 REUTERS Columbia Pipeline Group and Columbia Pipeline Partners Schedule Earnings Release for May 3 <CPGX.N><CP..

15:45 REUTERS Moody's Affirms 11 Classes of COMM 2014-UBS3

15:44 REUTERS Verizon offers improved contract proposal to worker unions

15:43 EOTP YM: Market is Uncertain; stocks:AAPL, IBM, VZ; impact:16.15; confidence:66; delta:4.53

15:42 RTS 國際油市：油價因美元疲弱跳漲2%至2016年高位，儘管供應充裕

15:42 REUTERS Robbins Arroyo LLP: Acquisition of St. Jude Medical, Inc. (STJ) by Abbott Laboratories (ABT) May Not Be in Sh..

15:41 SI 7.3 magnitude earthquake near Vanuatu

15:41 EOTP YM: News & Momentum Bullish; stocks:IBM, VZ; impact:17.04; confidence:68; delta:6.94

15:41 RTS US STOCKS-Wall St flounders on BOJ fears as Facebook, M&A boosts wane

15:41 RTS FOREX-Dollar to post biggest loss vs yen in 5 years on BOJ inaction

15:40 EOTP YM: News & Momentum Bullish; stocks:IBM, VZ; impact:17.19; confidence:68; delta:6.92

Can You Make Sense of This News Stream?

benefit cancer researc...

a:4.56

a:4.65

# How News is Structured

Event

Time

Process

DeepStreet Edge Dashboard

## FIRST ALERT

When a newsworthy event occurs, the first part of a story may be an alert, a short sentence in upper-case that contains the facts and essential detail.

## First Alert

If there is no social media detection of this event we move to display.

**ALERT: U.S. STEEL MAKER NUCOR CUTS PROFIT FORECAST<NUE.N>**

EOTPRO calculates:

Expected Market Return = -3.0%  
 Historical Target Accuracy = 87.5%  
 Time to be priced into stock = 130:00 mins

NEWSBREAK

### HEADLINE

A newsbreak is generally created 5-20 minutes after any alerts.

+5-20 min

### BODY

A newsbreak story body is also created 5-20 minutes after alerts.

UPDATE 1

### HEADLINE

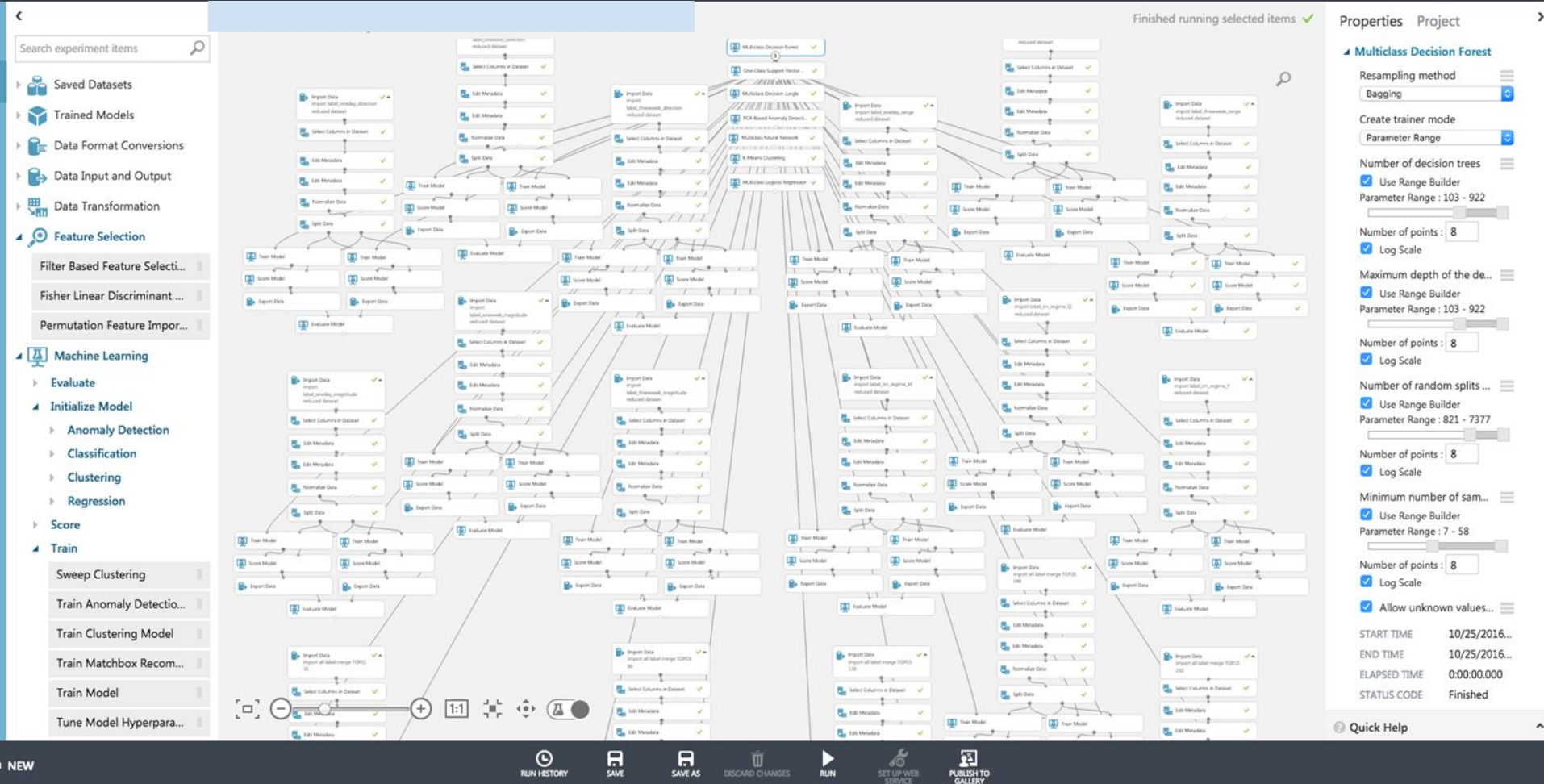
**UPDATE 1** Headlines in the update may be different from the newsbreak.

+20-30 min

### BODY

6-20 paragraphs of body text with further information about the event are released.





Search experiment items

Finished running selected items

Properties Project

**Multiclass Decision Forest**

Resampling method  
Bagging

Create trainer mode  
Parameter Range

Number of decision trees  
 Use Range Builder  
Parameter Range : 103 - 922

Number of points : 8  
 Log Scale

Maximum depth of the de...  
 Use Range Builder  
Parameter Range : 103 - 922

Number of points : 8  
 Log Scale

Number of random splits ...  
 Use Range Builder  
Parameter Range : 821 - 7377

Number of points : 8  
 Log Scale

Minimum number of sam...  
 Use Range Builder  
Parameter Range : 7 - 58

Number of points : 8  
 Log Scale

Allow unknown values...

START TIME 10/25/2016...  
END TIME 10/25/2016...  
ELAPSED TIME 0:00:00.000  
STATUS CODE Finished

Quick Help

NEW

RUN HISTORY SAVE SAVE AS DISCARD CHANGES RUN SET UP WEB SERVICE PUBLISH TO GALLERY

Can a retail trader program their own Machine Learning model by accessing the early news stream & by testing in AWS or Azure?

# This Is The Hardest Part of Building the System - *Visually displaying actionable signals*

**STREET EDGE** | Dashboard | Indices | Analysis | Settings | Return | Help |
LIVE Last Update: 3:18:30 PM | Logout

### Real Time Portfolio Alert

Time: 9/14 15:18  
Novelty: repeat 1  
Latest News Alert: **UPDATE 2-Monte dei Paschi appoints Marco Morelli as new CEO.**  
Sent. 0.82, Rel. 17%

**JPM** U3

Price @alert: \$66.34  
Timer: 44:56 min:sec  
Return: \$0.09  
Confidence: 77%

### Impact of Alert

### Portfolio/Filters

symbol search ...

- JPM \$0.09
- XNCR \$0.26
- TWTR \$0.08
- GM \$0.05
- SPPI \$0.04
- AAPL \$0.14
- F \$0.59
- GS \$0.29
- APC \$0.56

Time	Symbol	Alert Count	Real Time Market Alerts	Price @alert	Return with Confidence	Index Momentum
15:18	<b>JPM</b>	6 long	UPDATE 2-Monte dei Paschi appoints Marco Morelli as new CEO. Sent. 0.82, Rel. 17% Novelty: repeat 1 Broker Action:	\$66.34 U3	\$0.09 In play 77%	YM News & Momentum Diverging
15:03	<b>GM</b>	3 long	GENERAL MOTORS - IS IN THE PROCESS OF ADDING 30 MEGAWATTS OF SOLAR ARRAYS AT TWO FACILITIES IN CHINA<GM.N>. Sent. 0.52, Rel. 100% Novelty: new Broker Action:	\$30.72 U1	\$0.05 In play 87%	ES News & Momentum Diverging
15:00	<b>NLSN</b>	2 long	Nielsen To Deliver All-Electronic Measurement To Local TV Markets In 2017 And Retire Paper TV Diaries In 140 Local TV Markets. Sent. 0.83, Rel. 100% Novelty: new Broker Action:	\$51.89 U3	\$0.08 Stop out 84%	
15:00	<b>TWTR</b>	2 long 2 short	Reuters Insider - Powell blasts Trump as 'national disgrace' in emails. Sent. 0.46, Rel. 41% Novelty: repeat 1 Broker Action:	\$18.08	\$0.08 56%	

Leave a message

Club Room Audio

Off Air  
Offline

Next: Nothing scheduled

# What Is The New Ideal Trading System?

Charting with traditional lagging indicators to enable back testing AND a Tested Machine Learning Model that produces trader alerts with:

1. Forward looking data - Early News alerts from multiple sources
2. Backward looking data - 10 years of price & fundamentals on US Stocks
3. Accurate scoring to validate the trading alert
4. Potential price movement for each trader alert
5. Probability weighting of the potential price movement
6. Expectation of when the stock will move to that price
7. Money management signals
8. A visual dashboard providing 'at-a-glance' which stocks (trader alerts) are about to move.



# What Subscribers Trading Futures See





# What Subscribers Trading Options See



# WHAT YOU DON'T GET

- This is not a brokerage account. You still need your Interactive Brokerage account.
- We don't recommend trades.
- We don't trade for you.
- We aren't licensed brokers.
- This is for serious, experienced intraday traders.
- No guarantee of trading results.
- Past results not a guarantee of future results.

# How to Get An Introductory Month Subscription to DeepStreet EDGE

Inside your TWS platform, search for EOTPRO Research in the menu. Click on the link. You'll land on our dashboard. Contact us for complete details.

Questions?

The screenshot displays a trading platform interface with a search for EOTPRO Research. The main window shows the stock price for ABBV at 60.61, up 1.18 (1.99%). A dropdown menu is open under 'Analyst Research', listing various research sources. The search results for 'EOTPRO Research' are visible at the bottom of the menu.

Position	Quantity	Limit	n/a
0			

Buy 100 Limit n/a

POSITION 0 NBBO 60.60 / 60.61

Buy Sell

ABBV 60.61 +1.18 1.99%

Bid/Ask 60.60 x 60.61  
Size 1 x 2

Hi/Lo 60.62 - 59.57  
52 H/L 67.55 - 49.03

V/ADV  
Vol 3.42M  
Avg 7.53M

VALUATION  
MCap 98.5B  
Pr/Bk 15.2

News Broad Tape ABBV Filtered

TIME-SOURCE-SYMBOL-HEADLINE

08:32 SA Biotech Forum Daily Digest: Bio

07:33 SS ABBV Negative - AbbVie Inc. \$

07:05 TS Bond Sell-Off Could Be Huge fo

06:45 IS ABBV Price Spike Up Last:

06:36 ZK Amgen/Allergan File for EU App

05:56 SI AbbVie (ABBV), the Johns Hopk

05:56 SIP AbbVie (ABBV), the Johns Hop

05:55 SI AbbVie (ABBV), Northwestern U

05:55 SIP AbbVie (ABBV), Northwestern

05:55 REUTERS AbbVie and Johns Hopkin

05:55 PR AbbVie and Johns Hopkins to C

05:53 REUTERS BRIEF-AbbVie, Lurie Cand

05:50 REUTERS AbbVie and Northweste

05:50 PR AbbVie and Northwestern Unive

Newswire Status: News for stocks in you

03:34 SI AbbVie (ABBV) Updates on Fiv

03:34 SIP AbbVie (ABBV) Updates on Fiv

01:23 SA Dividend Income Update: Nove

01:01 BZ Abbvie Announces Favorable R

12/04 21:30 ESZ Estimize earnings estimate

12/04 21:00 VLEC Industry report for Large CAP Pharma

12/04 21:00 VLE Industry report for Large CAP Pharma

Classic TWS Mosaic +

Analyst Actions  
Recent Publications  
Subscribed  
Altavista - Hedge Finder  
Altavista - ETF Alternatives  
Altavista Research  
Argus Research  
Asbury Research - Keys To This Week - US Stock Market and Weekly Wrap-Up  
Asbury Research - Monthly Investment Compass  
Briefing.com General Market Columns  
EOTPro Research  
ETF Guide Research  
Estimize Research  
EventVestor - Free  
EventVestor Corporate Conference Calendars  
EventVestor Corporate Events Calendars  
EventVestor Event-Driven Alpha Alerts  
Fingraphs.com  
Ford Equity Research - Mergent  
GimmeCredit Research  
Goosen Chinese Research Complete  
Goosen Chinese Research Lite  
Hammerstone Markets Feed  
Hammerstone Reports  
Hightower Report - Daily Energy Comment  
Hightower Report - Daily Financials Comment  
Hightower Report - Daily Grains Comment  
Hightower Report - Daily Livestock Comment  
Hightower Report - Daily Metals Comment  
Hightower Report - Daily Soft Commodities Comment  
Hightower Report - Weekly Market Letter  
Intrinio  
Langenberg and Co Research  
Market Edge Point and Figure Early Alerts  
Market Edge Research  
MarketGrader  
McAlinden Research Partners - Catalpa Capital Advisors  
Morningstar Analyst Reports  
New Constructs Research  
New Constructs Research Institutional  
Nightberg Country Briefings  
Nightberg Research  
Nightberg Sunday Observer and Macro Portraits  
PropThink Research  
Rareview Macro  
Sadif Analytics  
Social Alpha  
Strategas Research  
TheStreet Equity Research  
Validea Guru Stock  
ValuEngine  
ValuEngine Chinese  
Wall Street Horizon Enchilada Pro  
Wall Street Horizon Enchilada Pro Plus  
WaveStructure  
Waverly Advisors  
Websim Research  
Wright First  
Zacks Company Reports - Free  
Available  
Recognia Technical Insight