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@StockSense

# THE PORTFOLIO ARCHITECT

"NOTHING IS EVER TOO LATE"

*Modern Data Architectures for Big Data II*  
*Group 2*

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**“MOST PEOPLE STRUGGLE TO  
UNDERSTAND HOW TO INVEST  
AND IN WHICH STOCKS TO  
INVEST”**

*NY Times Jun. 2023 - S. Reedy*



# FACTS

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**#1**

Only 33% of people  
get to outperform  
the market

**#2**

Historically, the stock  
gets a return of 11%  
and 5% bonds

**#3**

Passive investing is  
the most used type  
of investing

**#4**

Passive investment is  
the most ideal for  
beginner investor

# STOCK SENSE

# WHAT IS STOCKSENSE?



A Financial  
Decision  
Making Tool

Stock Sense gives you  
valuable information  
about stocks you want to  
invest in



User-Friendly  
Tool

Insert the name of the  
stocks and the time you  
want to use for the  
analysis



No need for  
financial  
understanding

Get a rank of all the  
stocks and choose better  
where to analyse

# WHY USE STOCK SENSE ?

## In-depth Market Analysis

Stock sense uses its deep understanding of market trends and company data to guide stock selections.

## Performance Monitoring and Rebalancing

Regular performance reviews and portfolio rebalancing keep investment goals on track.

## Risk Management Expertise

Stock sense applies risk management techniques to temper volatility and enhance returns.

## Customization to Financial Goals

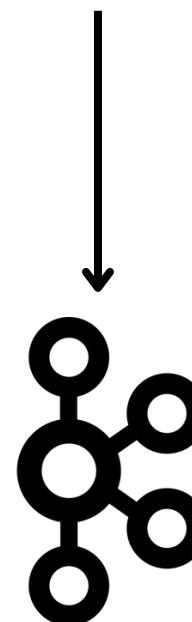
StockSense designs strategies tailored to an individual's financial timeline be it long-term or Short-term



# STOCKSENSE PIPELINE?



**Raw Data** - fetch stock data from Yahoo Finance for specified tickers



Combine the fetched data into a **.json file**



Publish to the Kafka topic named 'ticker\_data\_topic'.

Extract Columns  
Handle Missing Data  
Lagged Features  
Rolling Window Statistics  
Compute Financial Metrics



Save the combined data to HDFS.



Get User Input

# STOCKSENSE RANKING SYSTEM

## SubRanks

$R_v$  as the volatility rank,  
 $R_g$  as the growth rank,  
 $R_{vc}$  as the volume change rank,  
 $R_{rac}$  as the rolling average close change rank.

## Weights

$w_v$  for volatility,  
 $w_g$  for growth,  
 $w_{vc}$  for volume change,  
 $w_{rac}$  for rolling average close change.

$$R_f = w_v \times R_v + w_g \times R_g + w_{vc} \times R_{vc} + w_{rac} \times R_{rac}$$



FINAL RANK

# DEMO



THANK  
YOU