JARVIS

THE FUTURE OF ROBO-ADVISORING

Guglielmo Aprile
Gianluca Nardo
Jonathan Walter

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INTRODUCTION

Creating an interactive **robo advisor** that will provide an **efficient portfolio** based on our clients' interests, capital and time. Jarvis is programmed in assisting you building **three different portfolios** based on ***efficiency, volatility and preferred sector partition*** respectively.

02

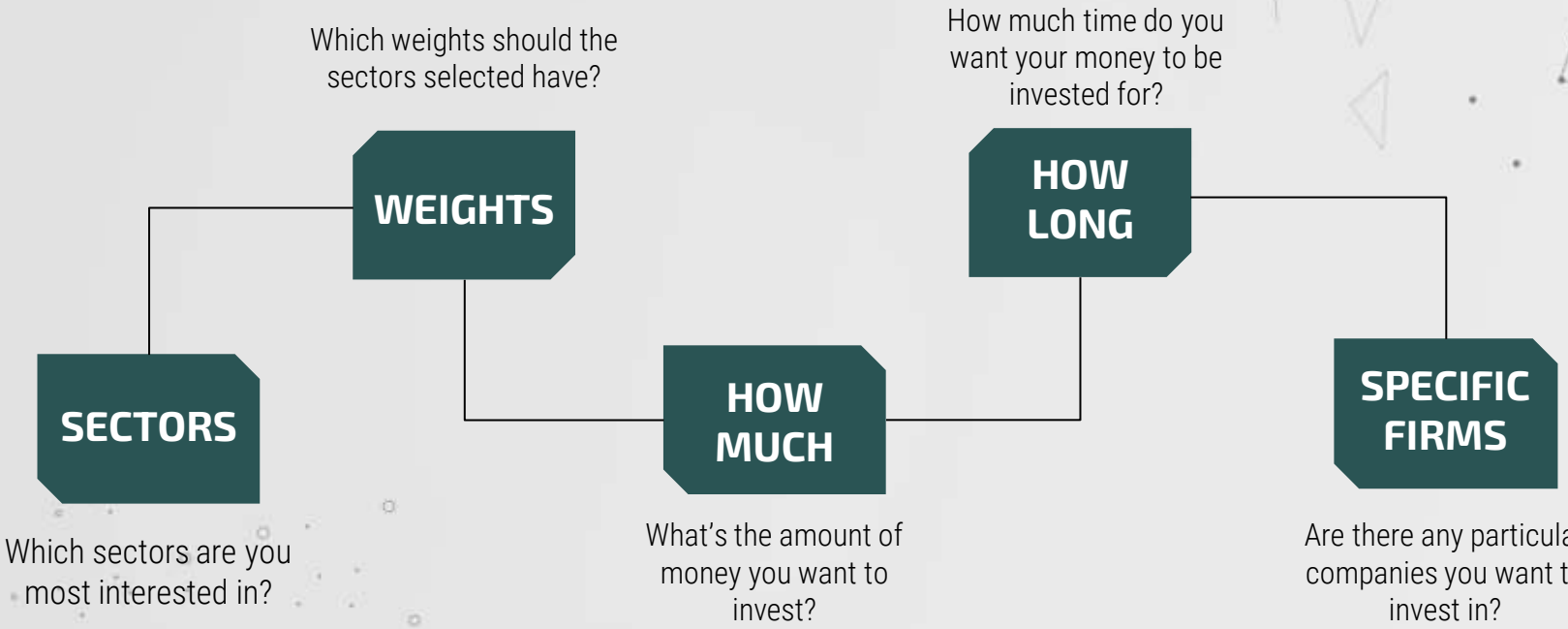
DATA SOURCING

1. Stock screener for obtaining top 100 **tickers** per sector
2. Data sourcing from **yahoo finance**
3. Database creation through **Pandas** for efficient portfolio frontier

03

NATURAL PROCESSING LANGUAGE

CLIENT'S REQUESTS



“Which sectors are you most interested in?”

“I would like to invest in the **energy** sector, in the **automotive** sector, but also in **business services**”

TEXT HANDLING → “energy” “automotive” “business services”

“*Which sectors are you most interested in?*”

“I would like to invest in the **energy** sector, in the **automotive** sector, but also in **business services**”

Aerospace	“aerospace”, “space”, “…”
Auto-Tires-Trucks	“cars”, “trucks”, “automotive”, “…”
Basic Materials	“basic materials”, “materials”, “…”
…	…

→

SECTORS SELECTED

Oils-Energy

Auto-Tires-Trucks

Business services

04

PORTFOLIO ALLOCATION

MEAN-VARIANCE MODEL

Pioneered by Harry **Markovitz** in 1952, the MPT model, also known as the Mean-Variance model, has been incredibly successful throughout the years to build portfolios to **optimize** the **expected return** given a level **risk tolerance**

MEAN-VARIANCE MODEL

EFFICIENT FRONTIER

ASSUMPTIONS

FLAWS

MEAN-VARIANCE MODEL

EXTRACT DATA

Retrive price data from companies selected and converting it into returns

MONTECARLO SIMILUTATION

Generate a large number of portfolios composed by randomly weighted assets to assess all possible portfolio combinations and set up arrays to hold results of return and volatility

SHARPE RATIO

Using the previous results, define the meaning of Sharpe ratio and iterate for each array, appending it in each portfolio's results

PANDAS DATAFRAME

Set up arrays as a table in order to better identify each key result for each company

EFFICIENT PORTFOLIO

Select the portfolio with the highest Sharpe ratio as, financially, is the most efficient portfolio

MVP

Highlight the minimum variance portfolio, as the client may be interested by the lowest possible risky portfolio

PERSONALIZED PORTFOLIO CREATION

Oils-Energy **30%**

Auto-Tires-Trucks **50%**

Business Services **20%**

Jarvis provides a portfolio with the indicated weights for different sectors

05 RESULTS

We examine the three different portfolios created by Jarvis

LEAST VOLATILE

Return : **12.788%**
Profit : **1280$** over 2 years

Ticker	Weight
XOM	0.041427
CVX	0.101597
TSLA	0.022874
TM	0.465378
V	0.064193
MA	0.128647
SPOT	0.175883

MOST EFFICIENT

Return : **33.869%**
Profit : **3390$** over 2 years

Ticker	Weight
XOM	0.003494
CVX	0.323943
TSLA	0.037875
TM	0.028678
V	0.309714
MA	0.287746
SPOT	0.008551

PERSONALIZED PF

Return : **24.619%**
Profit: **2460$** over 2 years

Ticker	Weight
XOM	0.299993
CVX	0.000007
TSLA	0.129093
TM	0.370907
V	0.069223
MA	0.130777

06

CONCLUSION

POSSIBLE DEVELOPMENTS

ACCURACY NEEDS TIME

- Pickle library

EXPAND THE FINANCIAL STRUCTURE

- Add new financial instruments (ex: bonds)
- Consider risk aversion
- Integrate more sophisticated models