

# MIE 1622: Robo-advisor

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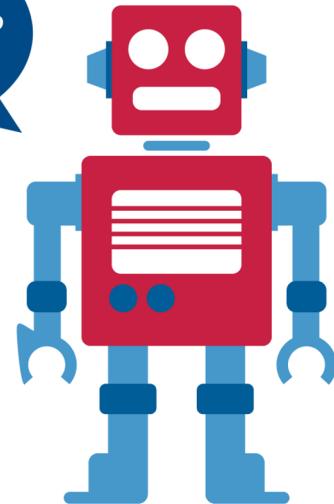
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How Can I Help  
You Today?



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**TORONTO**

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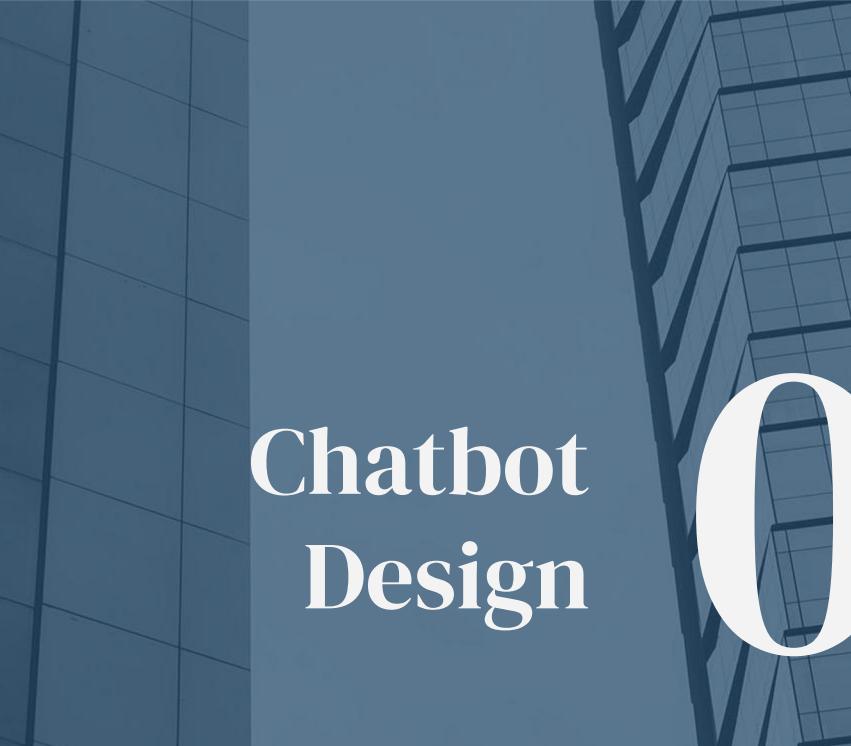
# Product Overview

## The demand

- With the endless pandemic and escalated international conflict , financial instability has continued to be a concern.
- But this also creates window for benefiting from the recovery of economics..
- People with financial awareness want to invest.
- But where to start?

## Our Solution

- The Robo-advisor for Investment strategies !
- What we offer:
  1. Optimal portfolio tailored to individual needs .
  2. Performance backed by historical look-back.
- Our advantages over real agents: 1. Lower cost. 2. No middle man. 3. Instant response.4. Historical performance

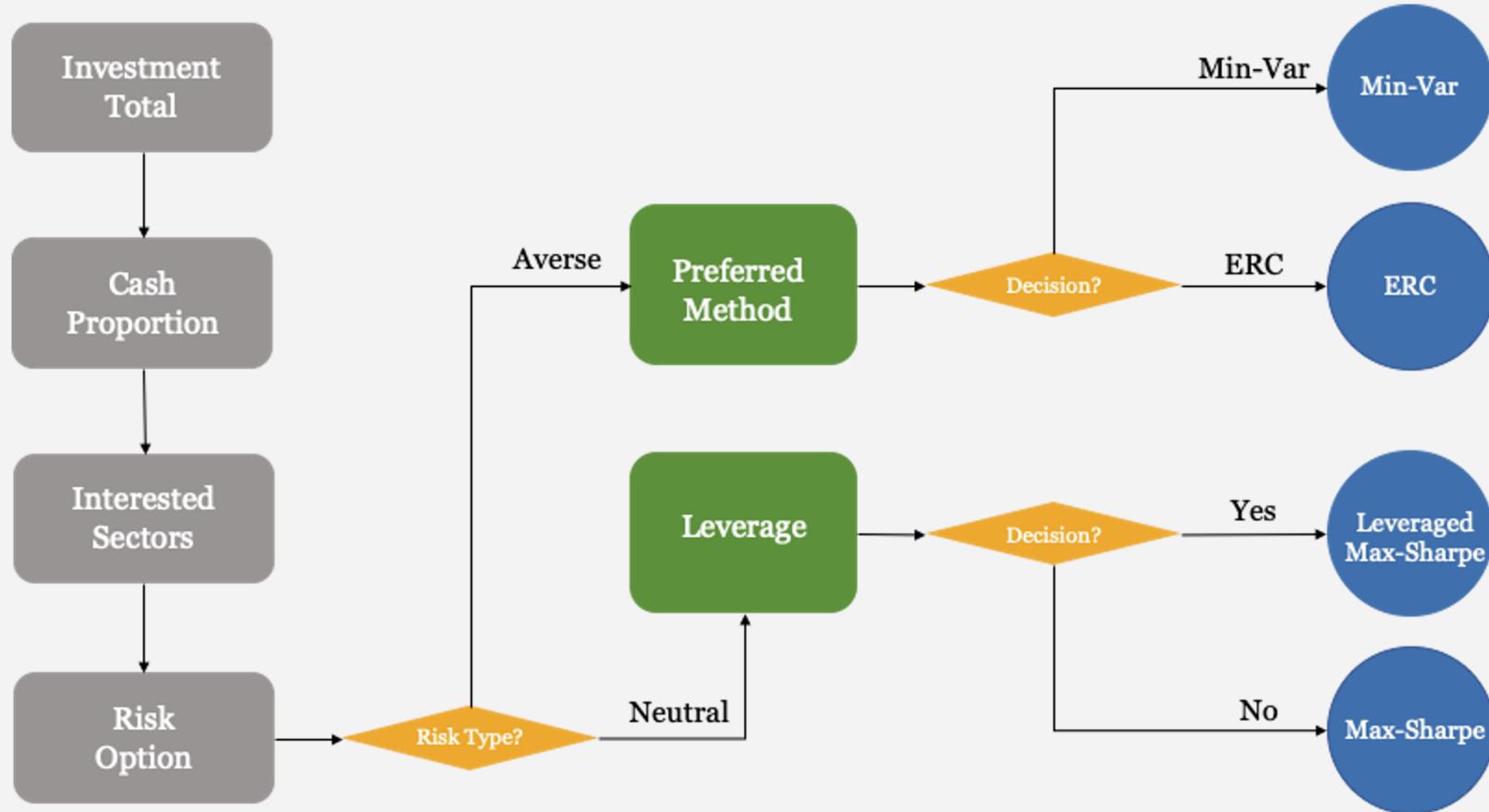


# Chatbot Design



# 02

# Question flow



# Some tech details – Chat Simulation

```
[ ] question_5 = message_assistant("Information Technology, Health Care, Financials")
question_5
'Do you consider yourself risk-averse or risk-neutral?'

[ ] question_6 = message_assistant("risk-neutral")
question_6
'Do you wish to take leverage(x2)? 'Yes' enter 1, 'No' enter 2.'

[ ] question_7 = message_assistant("1")
question_7
'okay! You are all set! '
```

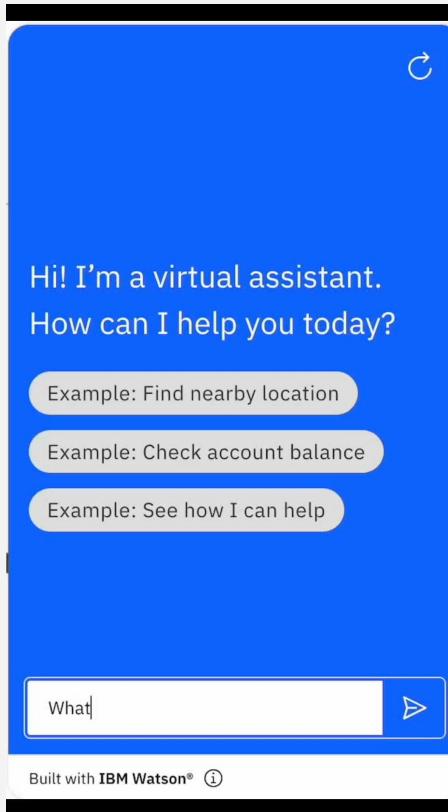
- Check if the chat-robo behaves the way we expect it to.

The background of the slide is a dark blue-tinted photograph of a city skyline. Several skyscrapers are visible, with one prominent building on the right featuring a curved facade and many windows.

03

# Demo Walk-through

# 1. Chat User Interface



Video Link: [https://drive.google.com/file/d/1FhTP2pz876BebiWP\\_K24ngrGhWKgXurk/view?usp=sharing](https://drive.google.com/file/d/1FhTP2pz876BebiWP_K24ngrGhWKgXurk/view?usp=sharing)

## 2. Backend process

- After all the questions,, the chat history is immediately communicated to the backend and informations are extracted accordingly.

```
The chosen ETFs are: ['XLK', 'XLV', 'XLE', 'XLB', 'XLC']
```

```
The leverage choice is 0
```

```
The total amount of investment is 1000000, the cash percentage is 0.3, and the risk preference is 1.
```

- Based on the above information, the program decides what strategy to apply and returns optimal portfolio, historical performance chart and etc.

```
Period 12: start date 10/01/2021, end date 12/31/2021
```

```
Strategy "Equally Weighted Portfolio", value begin = $ 1493767.07, value end = $ 1575900.94
```

```
Strategy "Maximum Sharpe Ratio Portfolio", value begin = $ 1492150.41, value end = $ 1578677.12
```

```
Period 13: start date 01/03/2022, end date 03/31/2022
```

```
Strategy "Equally Weighted Portfolio", value begin = $ 1580528.98, value end = $ 1605398.92
```

```
Strategy "Maximum Sharpe Ratio Portfolio", value begin = $ 1582457.73, value end = $ 1566649.01
```

### 3. Deliverable

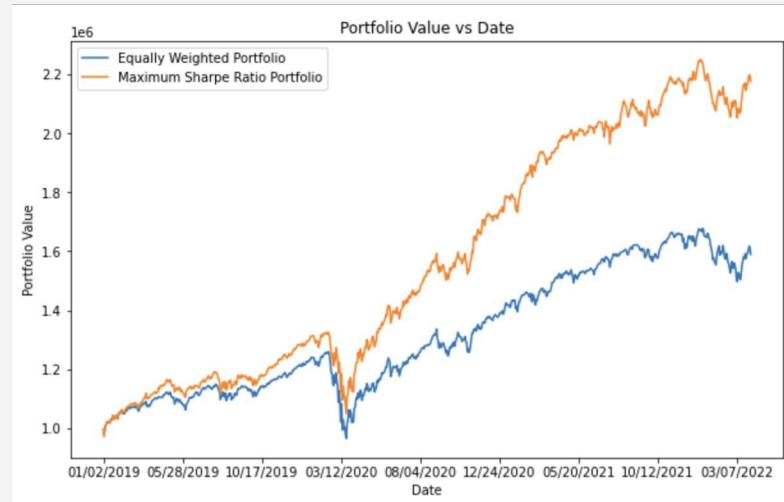
- Average annual rate:

Strategy "Equally Weighted Portfolio", CAGR = 15.45%

Strategy "Maximum Sharpe Ratio Portfolio", CAGR = 27.15%

- Portfolio weights(shares):

- Portfolio value chart (2019-2022.4)



The weights of each ETF in your portfolio will be: [3653 880 1021 756 2035]



# Future improvements

# 04

# Extensions to the chat-bot

Know you  
better



Extending questions:  
rebalance frequency,  
expected return, risk  
tolerance

Delivery  
option



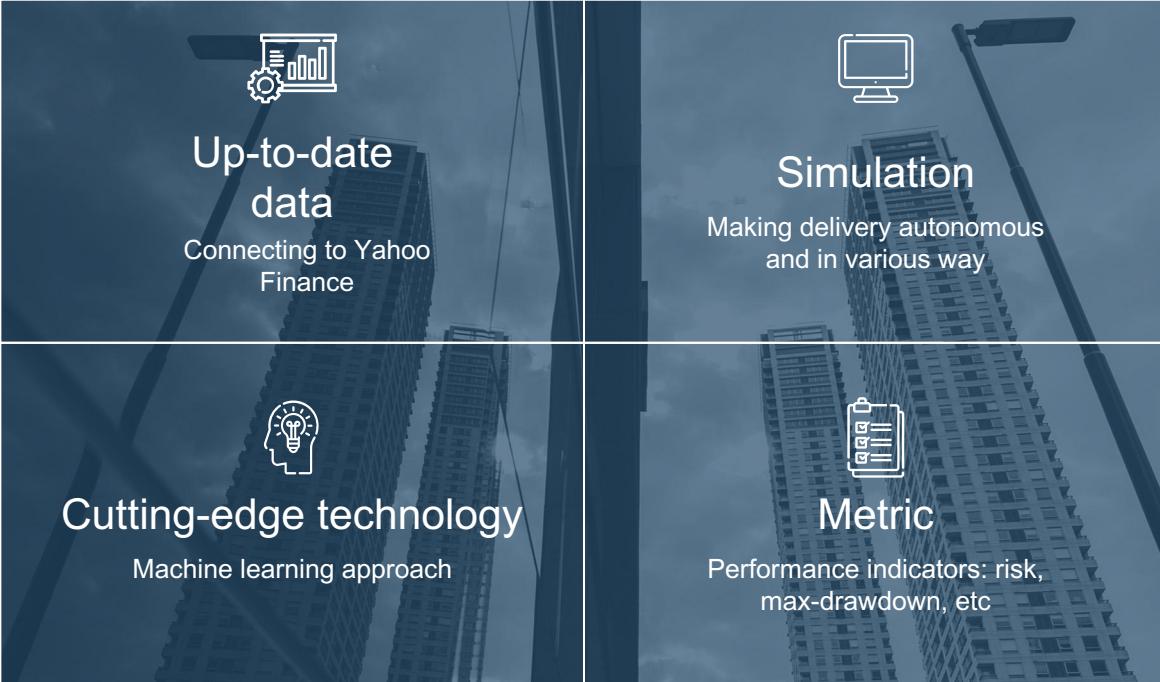
Making delivery  
autonomous

Premium  
Features



In addition to  
investment strategy,  
recommendations,  
macro advise

# Extensions to the backend





Thanks

We will take your  
questions now ^-^