



AUGUST 6-7, 2025

MANDALAY BAY / LAS VEGAS

Hacker Dropping Mid-Heist Selfies

LLM Identifies Information Stealer Infection Vectors and Extracts IoC

Estelle Ruellan, Threat Intelligence Researcher

Olivier Bilodeau, Principal Cybersecurity Researcher

Who Are We?



Olivier Bilodeau

- 15 years cybersecurity industry experience
- Principal Cybersecurity Researcher at Flare
- Former GoSecure, ESET. Founder MontréalHack
- NorthSec's President
- Serial presenter: DEFCON, BlackHat, SecTor, Botconf, CERT-EU, AtISecCon



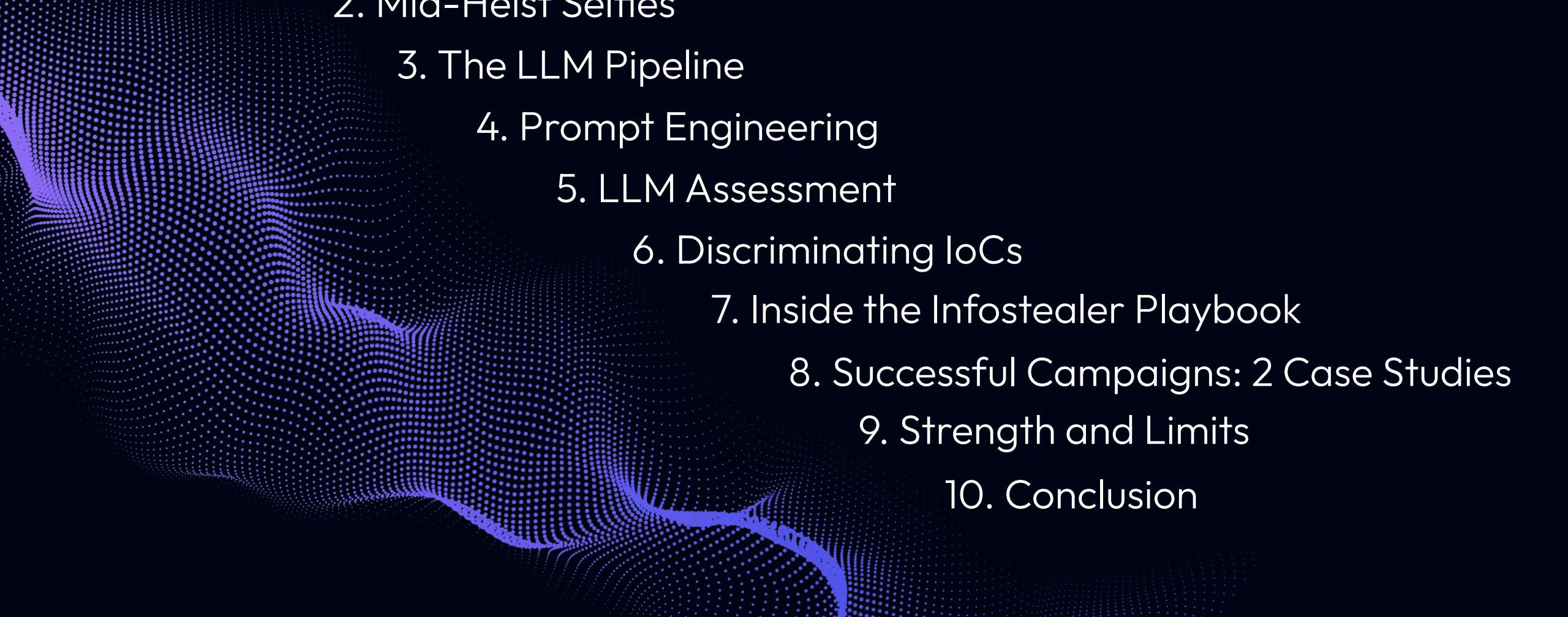
Estelle Ruellan

- Cyber Threat Intelligence Researcher
- Mathematics and Criminology Background
- Former student athlete
- Loves data science, shapes and colors
- Baby serial presenter: NorthSec, ShmooCon, Botconf, Hack.lu, eCrime APWG, EUROCRIME

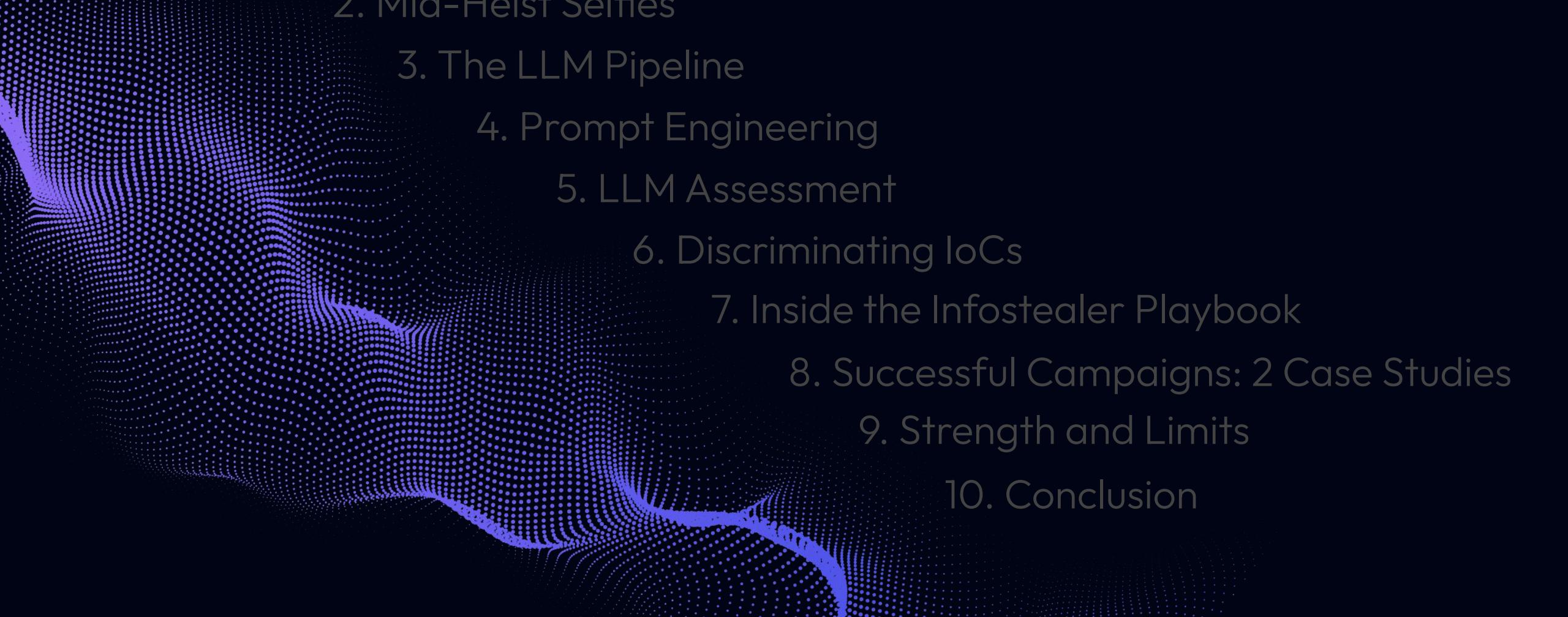
Honorable mentions:



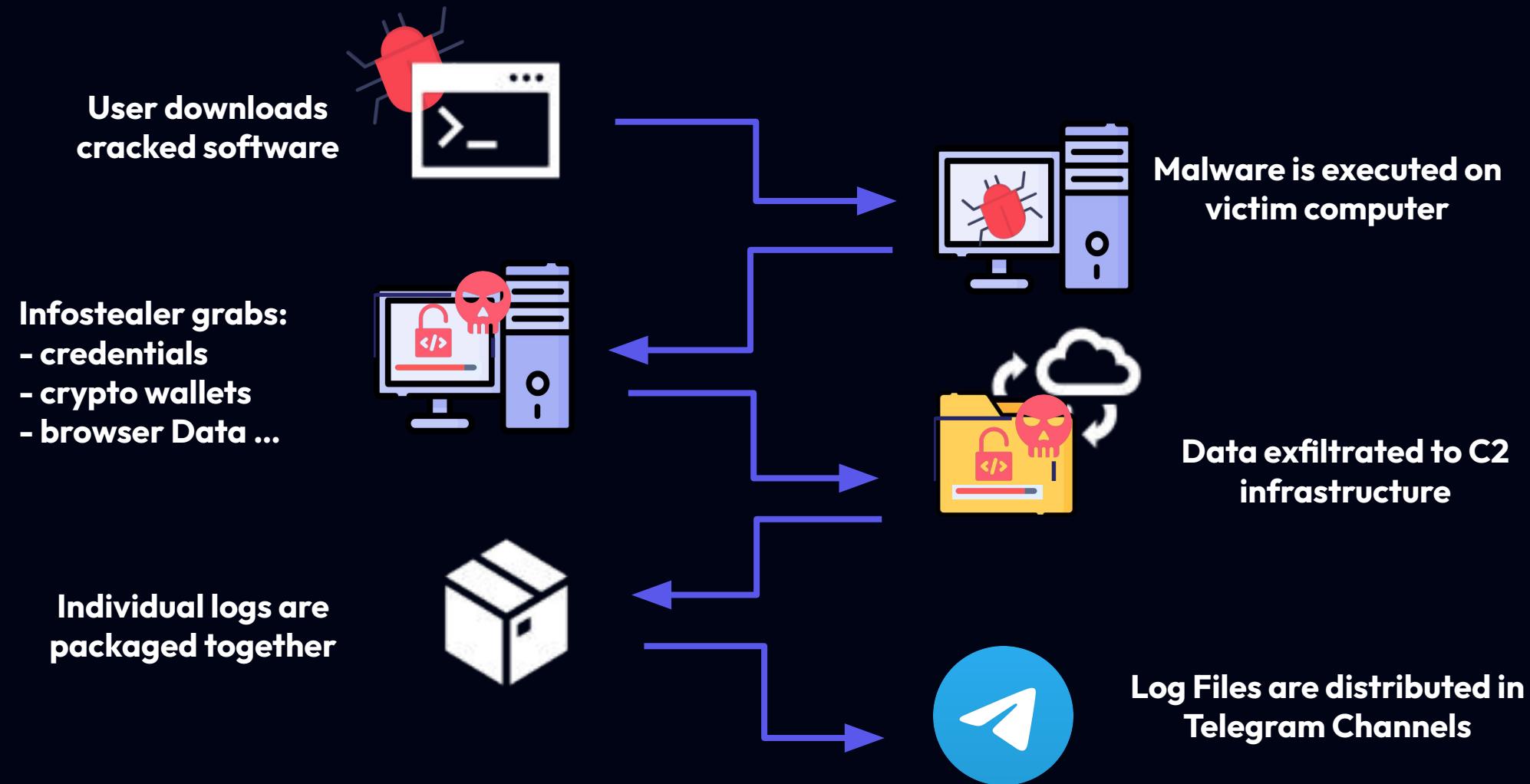
Agenda

- 
1. The Information Stealer Malware Phenomenon
 2. Mid-Heist Selfies
 3. The LLM Pipeline
 4. Prompt Engineering
 5. LLM Assessment
 6. Discriminating loCs
 7. Inside the Infostealer Playbook
 8. Successful Campaigns: 2 Case Studies
 9. Strength and Limits
 10. Conclusion

Agenda

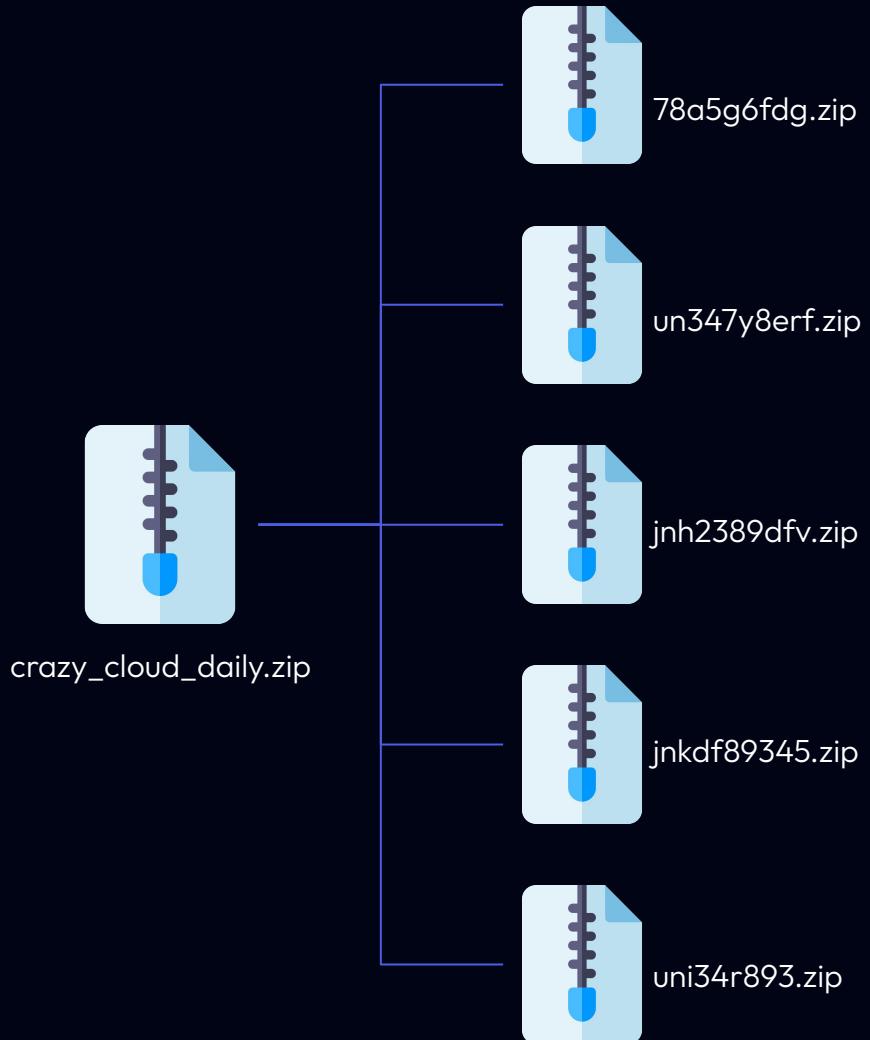
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The Malware you (may) have never heard of:

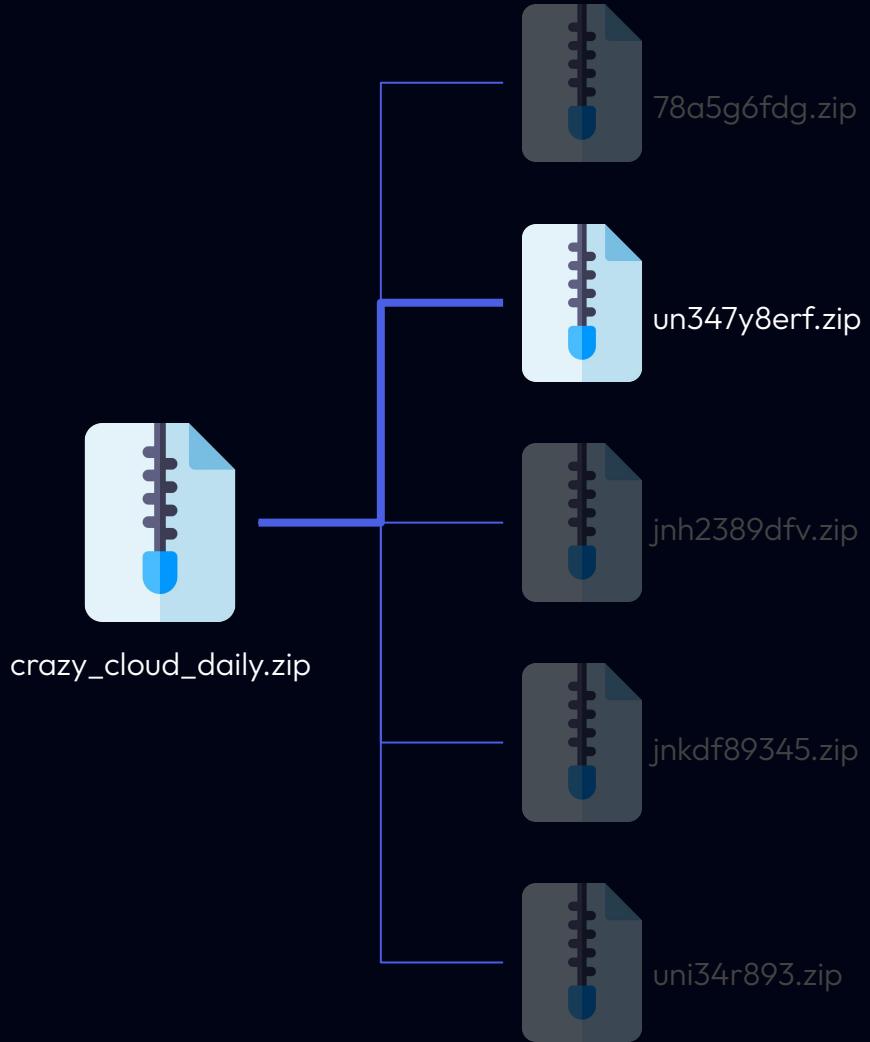


Administrative rights NOT required! && No Persistence!

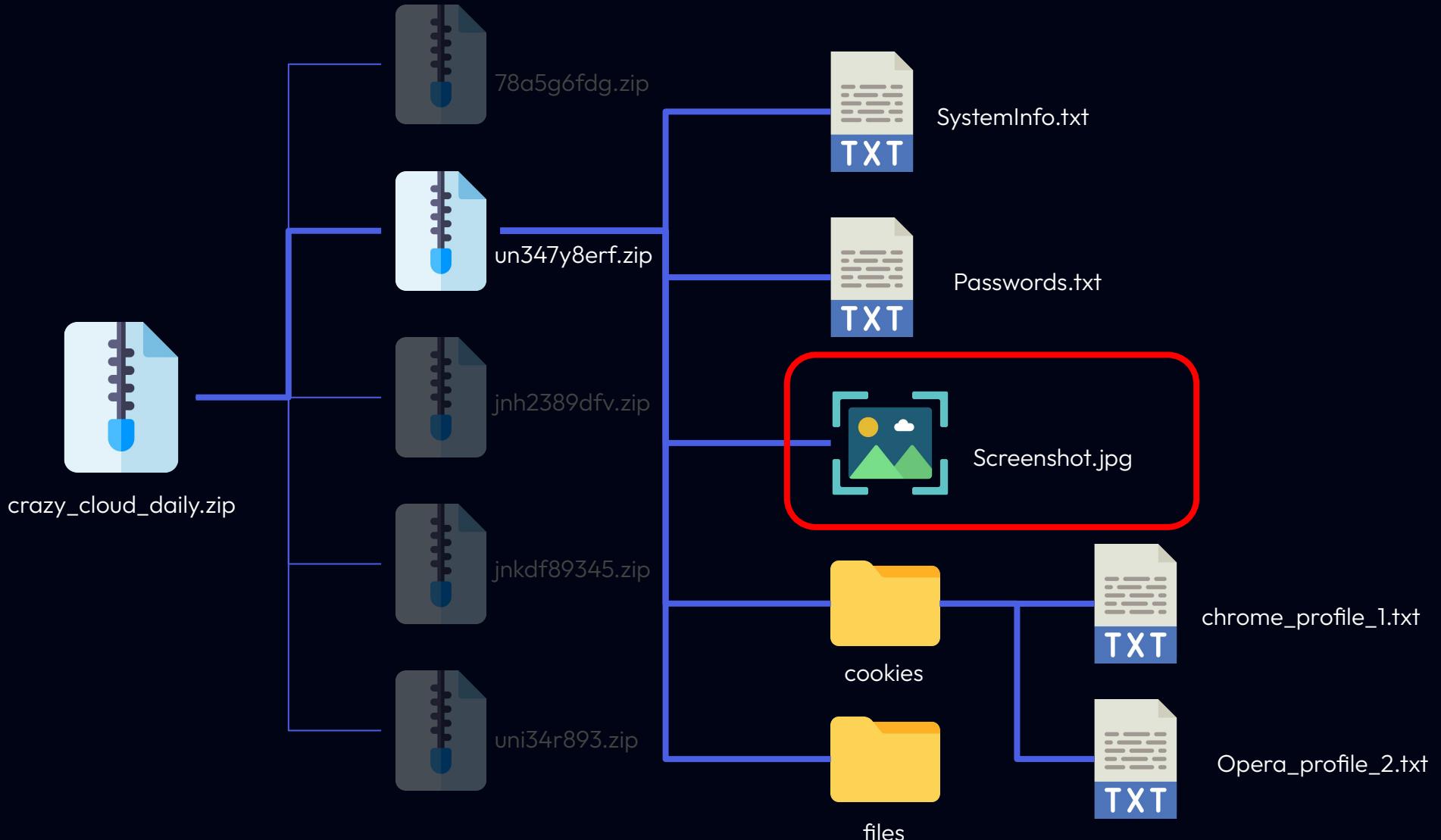
Stealer Log Structure



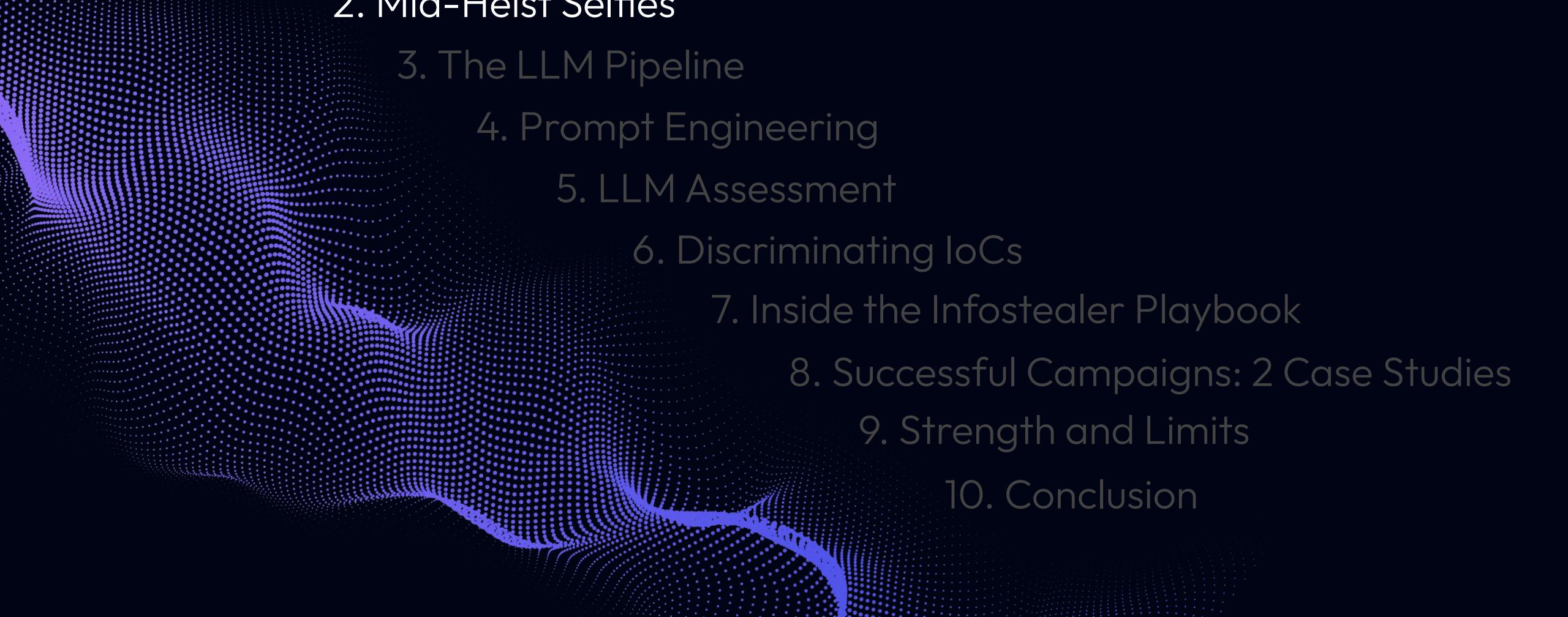
Stealer Log Structure



Stealer Log Structure



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Mid-Heist self

REALISTIC PICTURE OF
BRO BEHIND HIS SCREEN

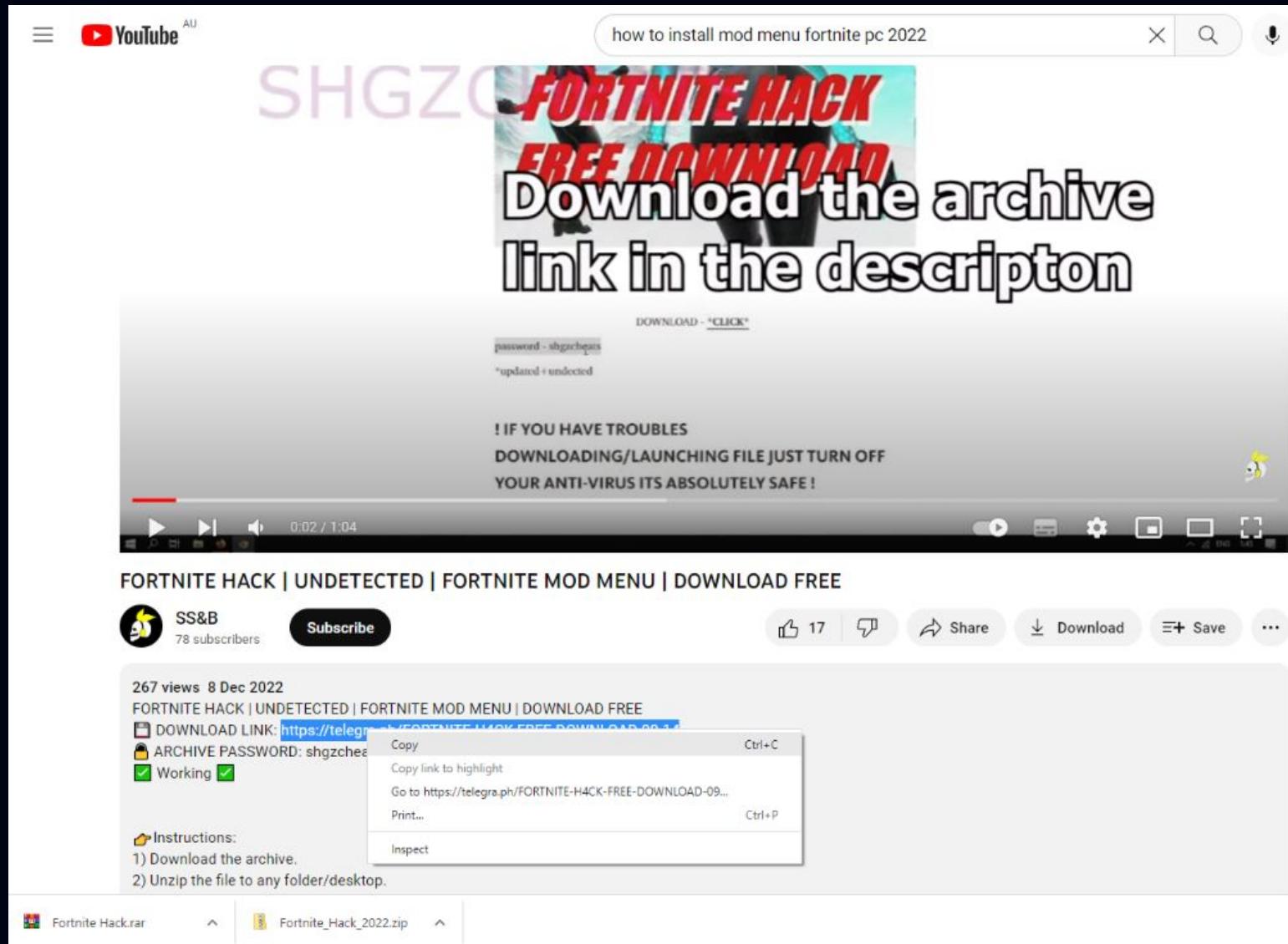


Mid-Heist selfies



Some examples

Mid-Heist selfies



Some examples

Mid-Heist s



Mid-Heist selfies

Infection screenshots contain all the clues and hints needed to solve the mystery of infection

THE NUMBERS

Mid-Heist selfies

11

Malware Families

+15M

Screenshots*

+25%

of all logs

*Including duplicates

THE NUMBERS

Mid-Heist

TOO MUCH
INFORMATION

COULD USE
AN LLM

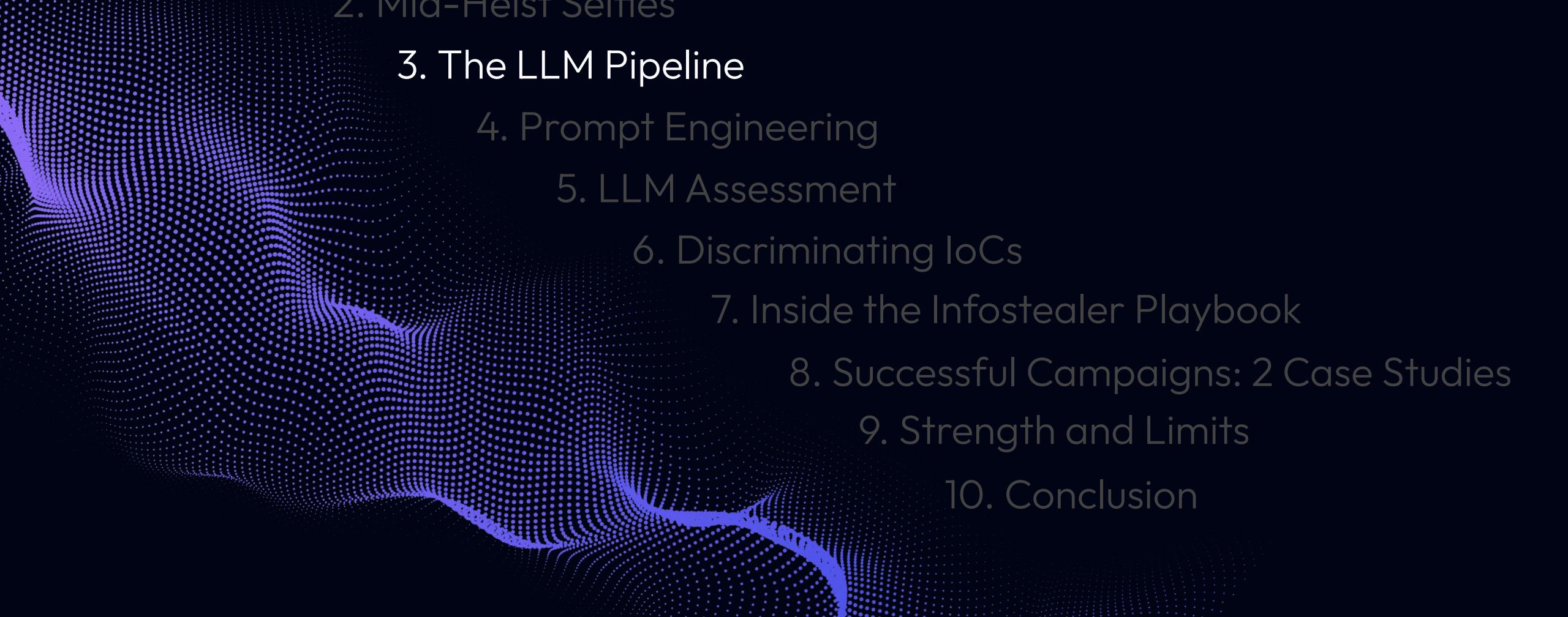
1

Malware

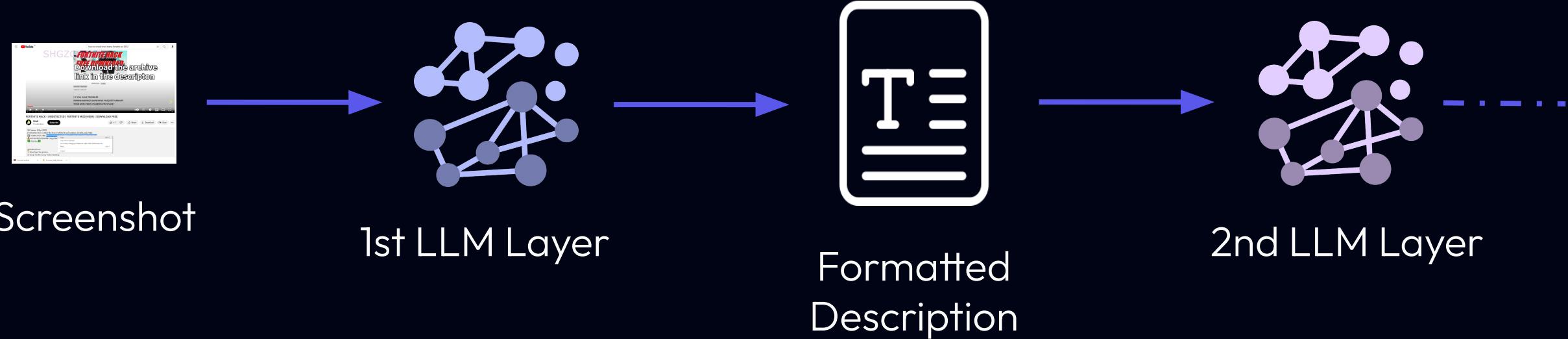
%
gs

*Including duplicates

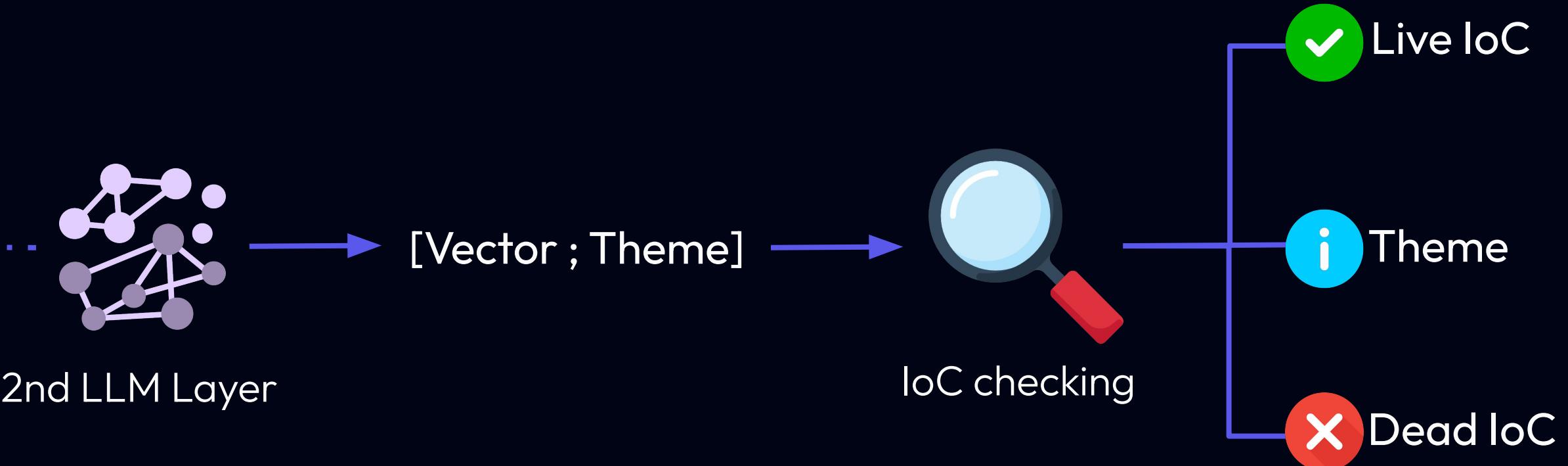
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Overview of the Pipeline



Overview of the Pipeline



Why 2 Layers ?

Overview of the Pipeline



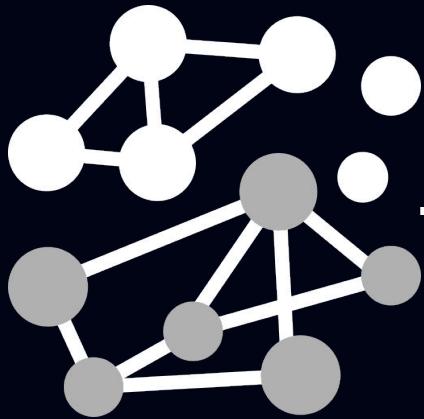
Screenshot



ayer

Why 2 Layers ?

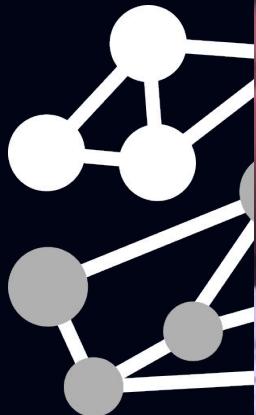
Overview of the Pipeline



“Identify the infection vector”

Why 2 Layers ?

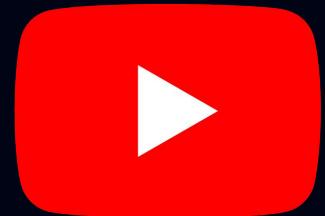
Overview of the Pipeline



vector”

Why 2 Layers ?

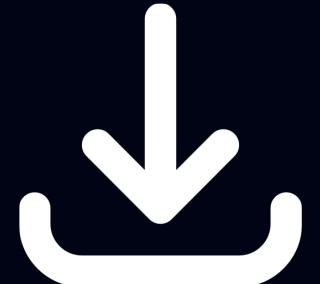
Prompt Engineering



FORTNITE

The image shows a YouTube video player with the following details:

- Title:** how to install mod menu fortnite pc 2022
- Thumbnail:** SHGZC (FORTNITE HACK FREE DOWNLOAD)
- Video Content:** A person's hands holding a smartphone displaying a mod menu for Fortnite.
- Description:** FORTNITE HACK | UNDETECTED | FORTNITE MOD MENU | DOWNLOAD FREE
- Statistics:** 267 views, posted on 8 Dec 2022.
- Actions:** Like (17), Dislike, Share, Download, Save.
- Copy Context Menu:** A context menu is open over the description text, with "Copy" highlighted. Other options include "Copy link to highlight", "Go to https://telegra.ph/FORTNITE-H4CK-FREE-DOWNLOAD-09...", "Print...", and "Inspect".
- File List:** At the bottom, there are two files:
 - Fortnite Hack.rar
 - Fortnite_Hack_2022.zip



WHY 2 LAYERS ?

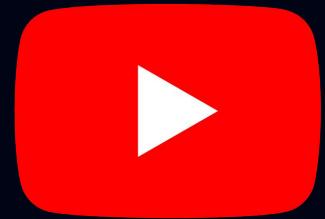
Overview of the Pipeline



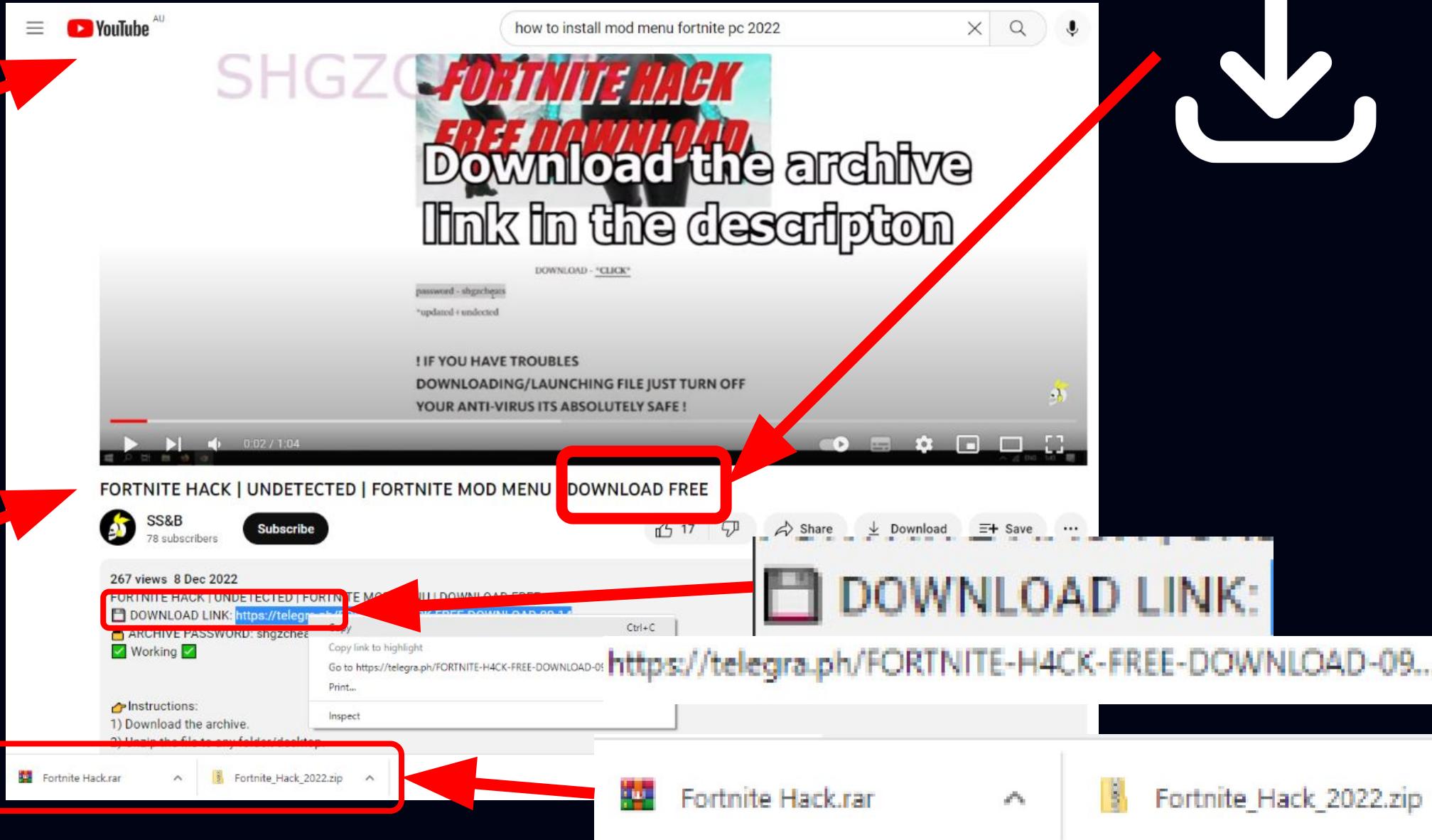
1. Visually assess the screenshot

Why 2 Layers ?

Overview of the Pipeline

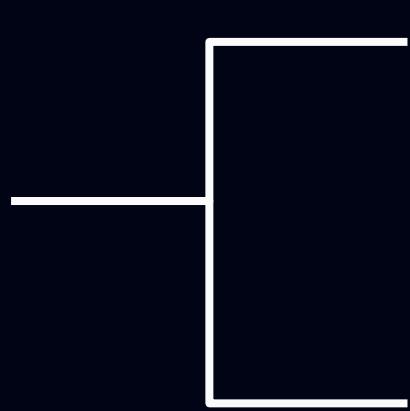


FORTNITE



Why 2 Layers ?

Overview of the Pipeline



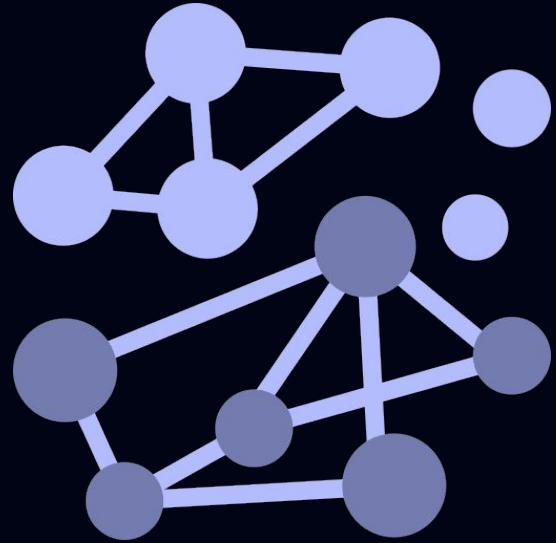
1. Visually assess the screenshot
2. Point out potential infection vectors based on field knowledge

Overview of the Pipeline

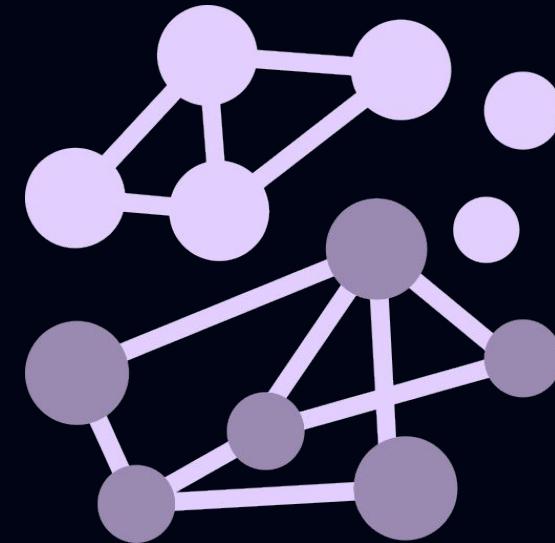
An LLM can't just 'figure it out':
we must **translate intuition** into
instructions.

Why 2 Layers ?

Overview of the Pipeline

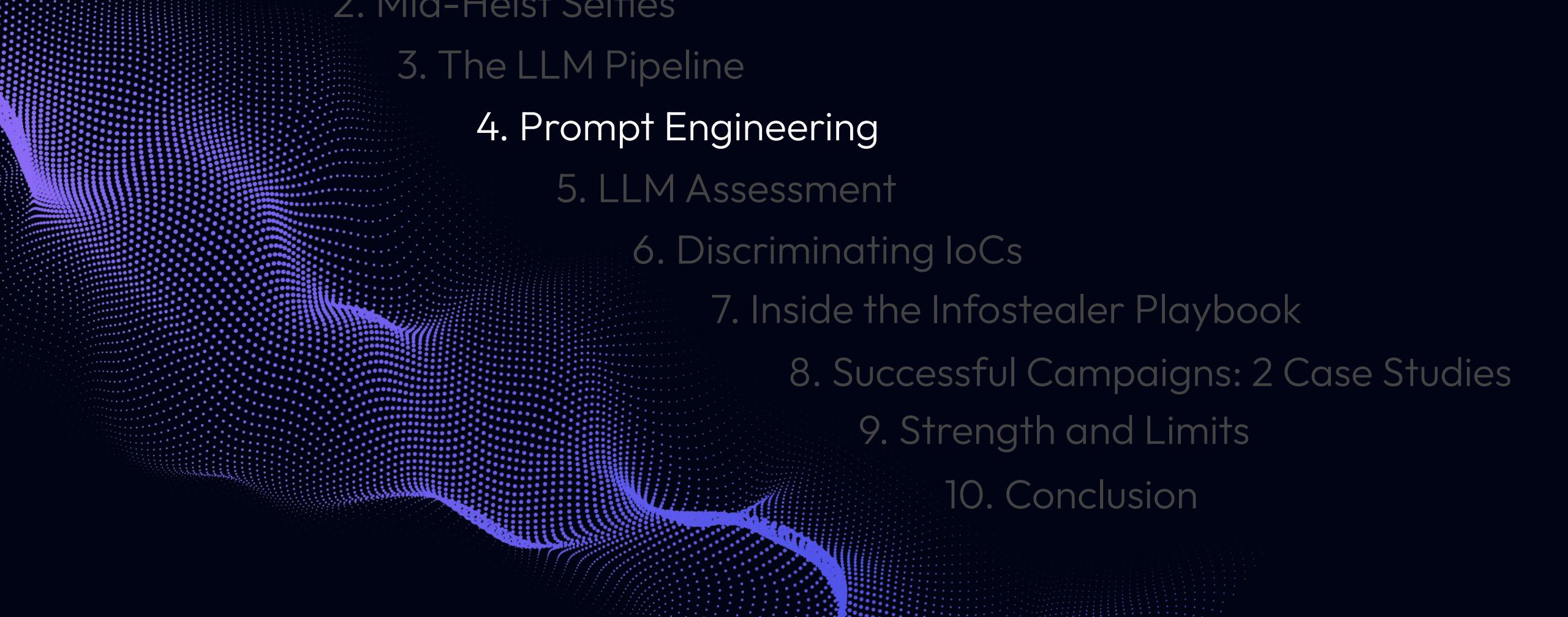


1. Visually assess the screenshot



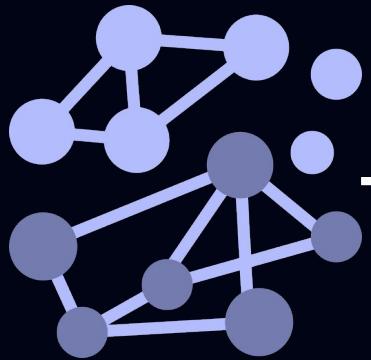
2. Point out infection vectors

Agenda

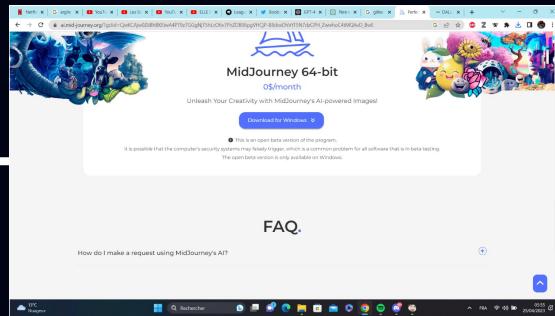
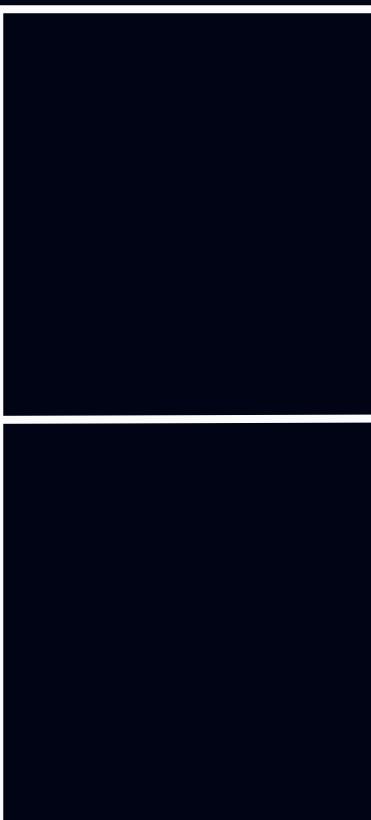
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The first layer

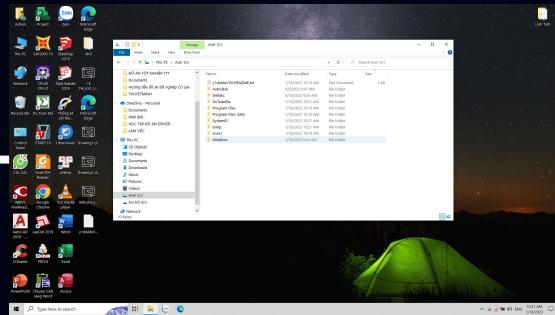
Prompt Engineering



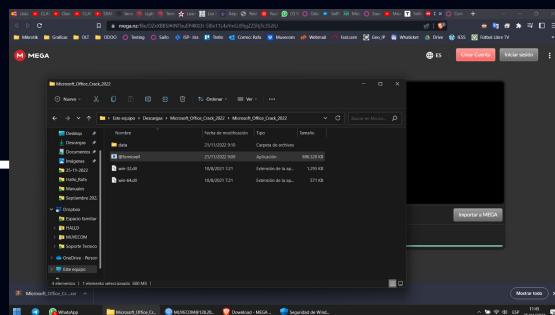
Visual Assessment



Web Content



File System

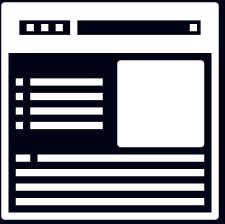


Hybrid

The first layer

Prompt Engineering

Web Content



A screenshot of a web browser window showing the MidJourney 64-bit landing page. The URL in the address bar is highlighted with a red box. The page features a large, colorful illustration of a fantastical landscape with a boat, a sun, and various characters. The text 'MidJourney 64-bit' and '0\$/month' is displayed, along with the tagline 'Unleash Your Creativity with MidJourney's AI-powered Images!'. A 'Download for Windows' button is present. A note at the bottom states: 'This is an open beta version of the program, it is possible that the computer's security systems may falsely trigger, which is a common problem for all software that is in beta testing. The open beta version is only available on Windows.' Below the browser window, the Windows taskbar shows the date '25/04/2023', time '05:55', and system status icons.

FAQ.

How do I make a request using MidJourney's AI?

13°C Nuageux

Rechercher

FRA

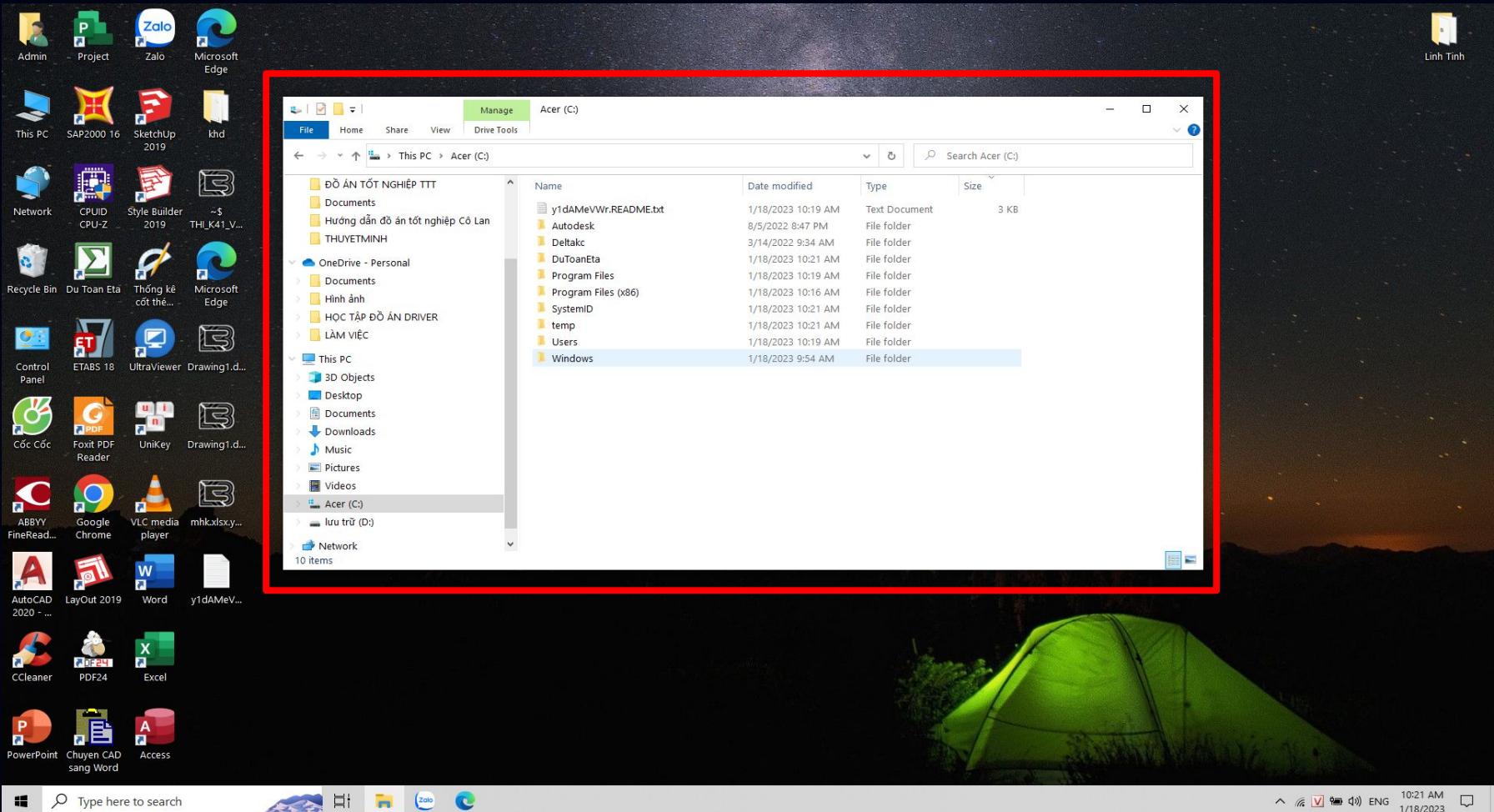
05:55

25/04/2023

The first layer

Prompt Engineering

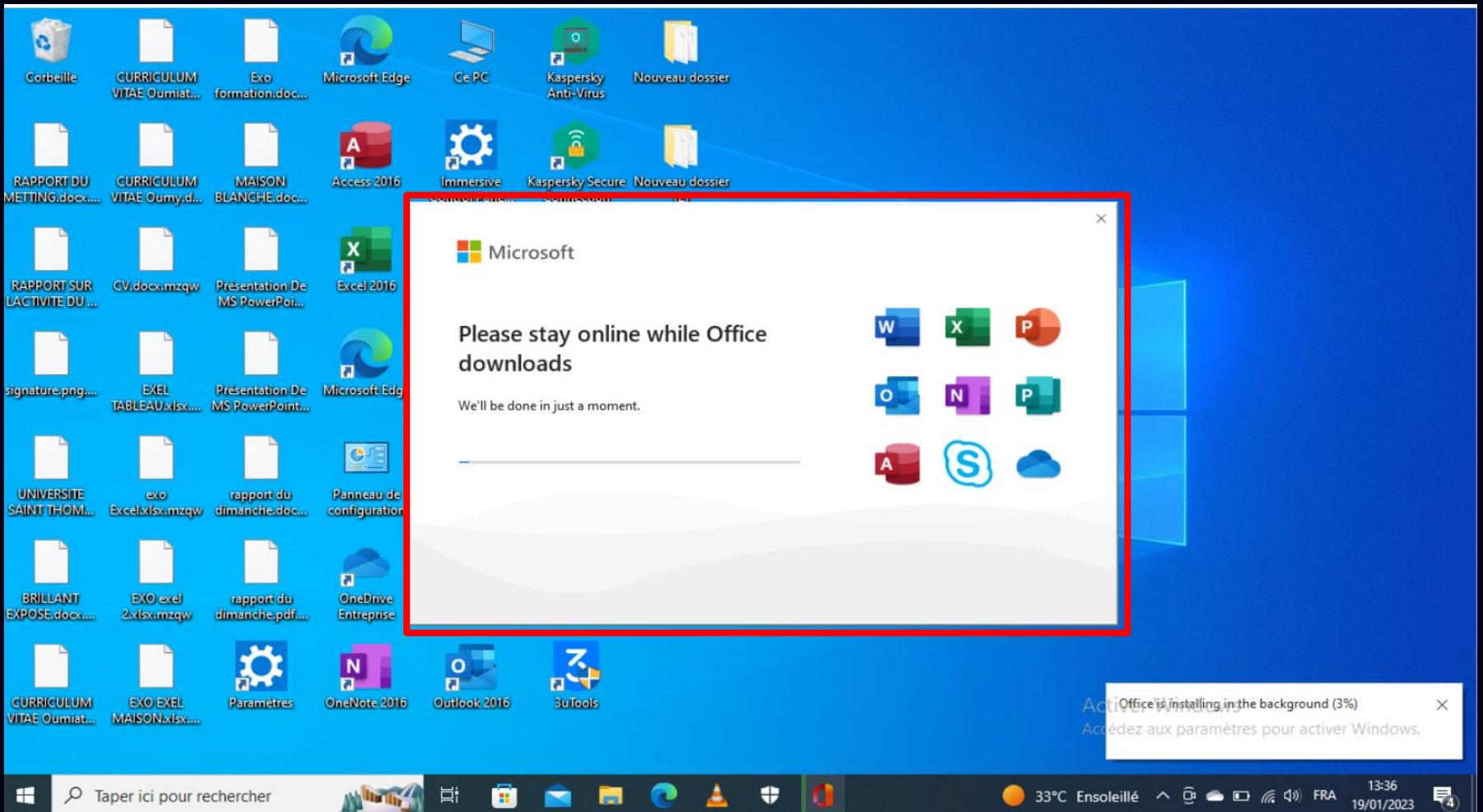
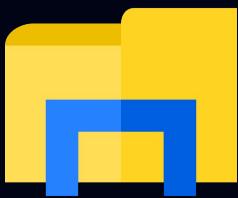
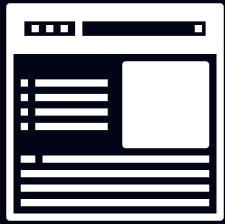
File System



The first layer

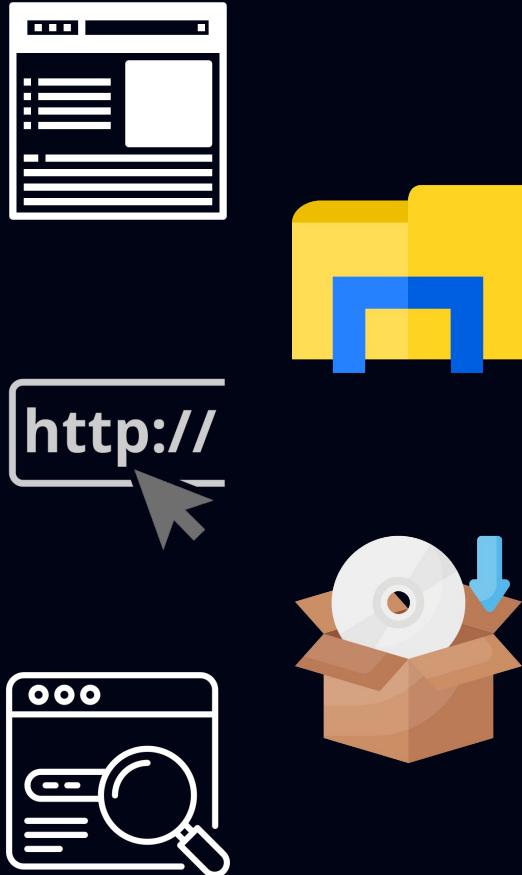
Prompt Engineering

File System

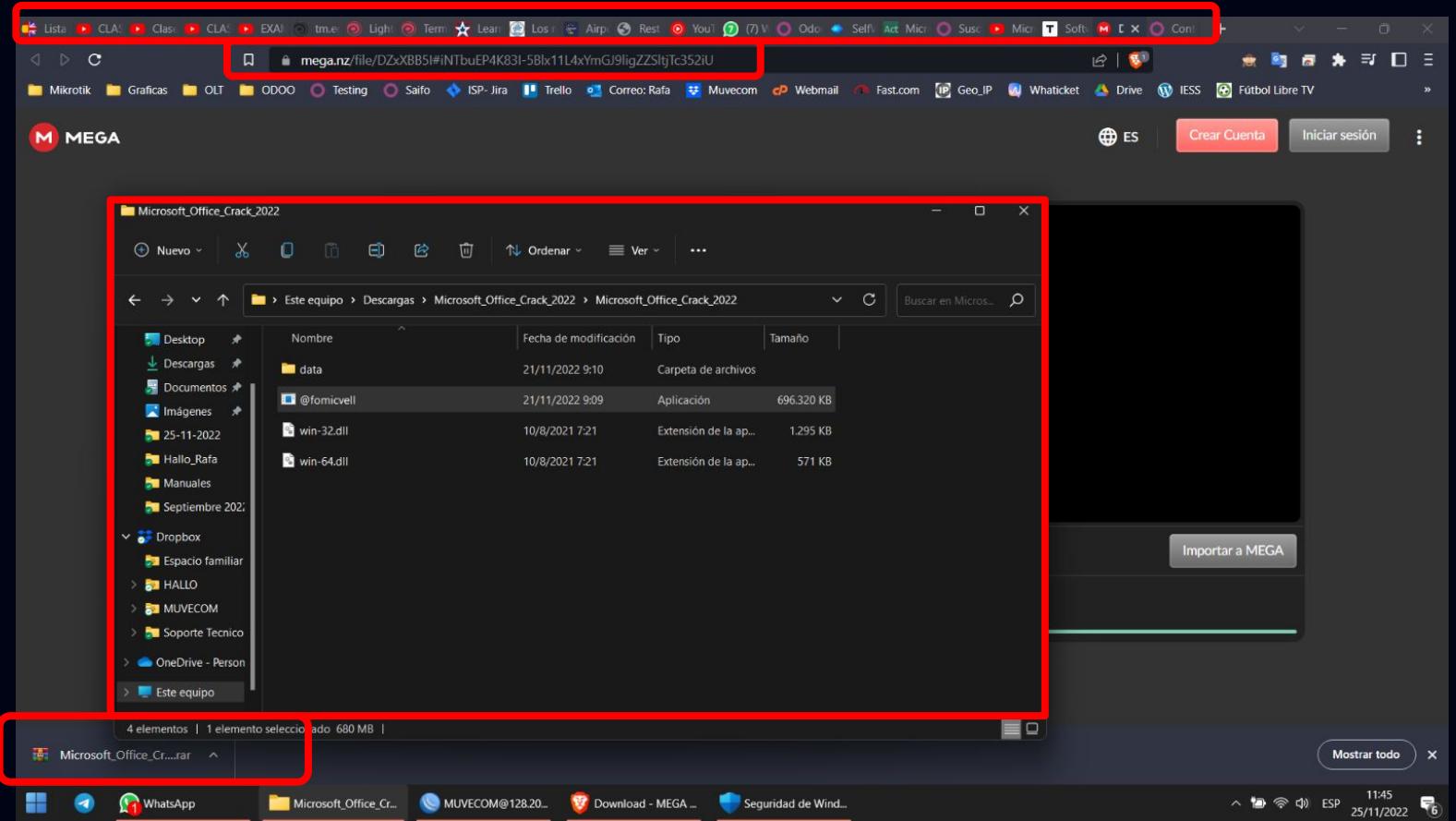


The first layer

Prompt Engineering

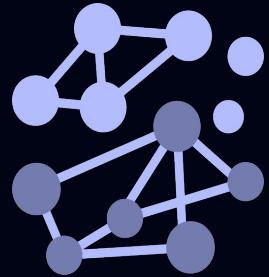


Hybrid

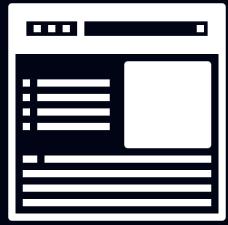


The first layer

Prompt Engineering



Visual
Assessment



Scene Description



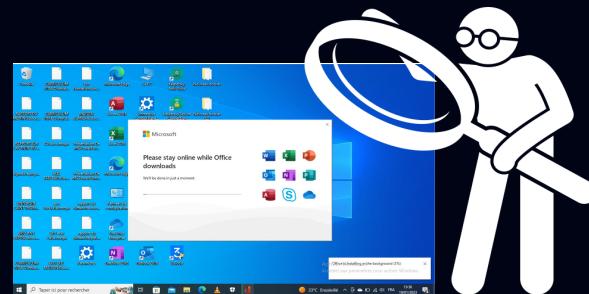
File Explorer & Installer



URL



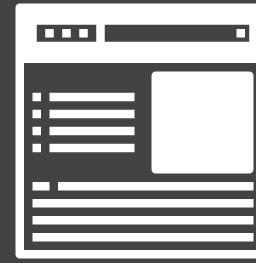
Browser Tab Identification



Suspicious Elements

Main Content:

Describe the main content visible on the screen, include as much detail as possible.



Files/Programs:

Installer: Focus on installers or install window, put the name of the file being installed. When there is a name for the installer window, get the name of file/folder or the path.

File explorer: Focus on file explorer if there is one. Put the names of files and their extensions in this section. If the path of the file explorer reveals the name of a folder/file, get it. Ignore all desktop programs and icons. Separate filenames by a ",". If there aren't any file, executable or program put "X".

URL

Put all URLs you see. If there aren't any URLs, put "X".

Browser Tabs Analysis:

Ignore bookmarks. For each active browser tab in the top row, list in this format:

- [logo: {logo name}] [text: {visible text}] (meaning/context if apparent). If there aren't any webpage, put "X".

Suspicious Elements:

Highlight any file, executable, program, URL or download link that could contain malware. These could be youtube videos, blogs, google drive, etc.

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URL

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Browser Tabs Analysis:

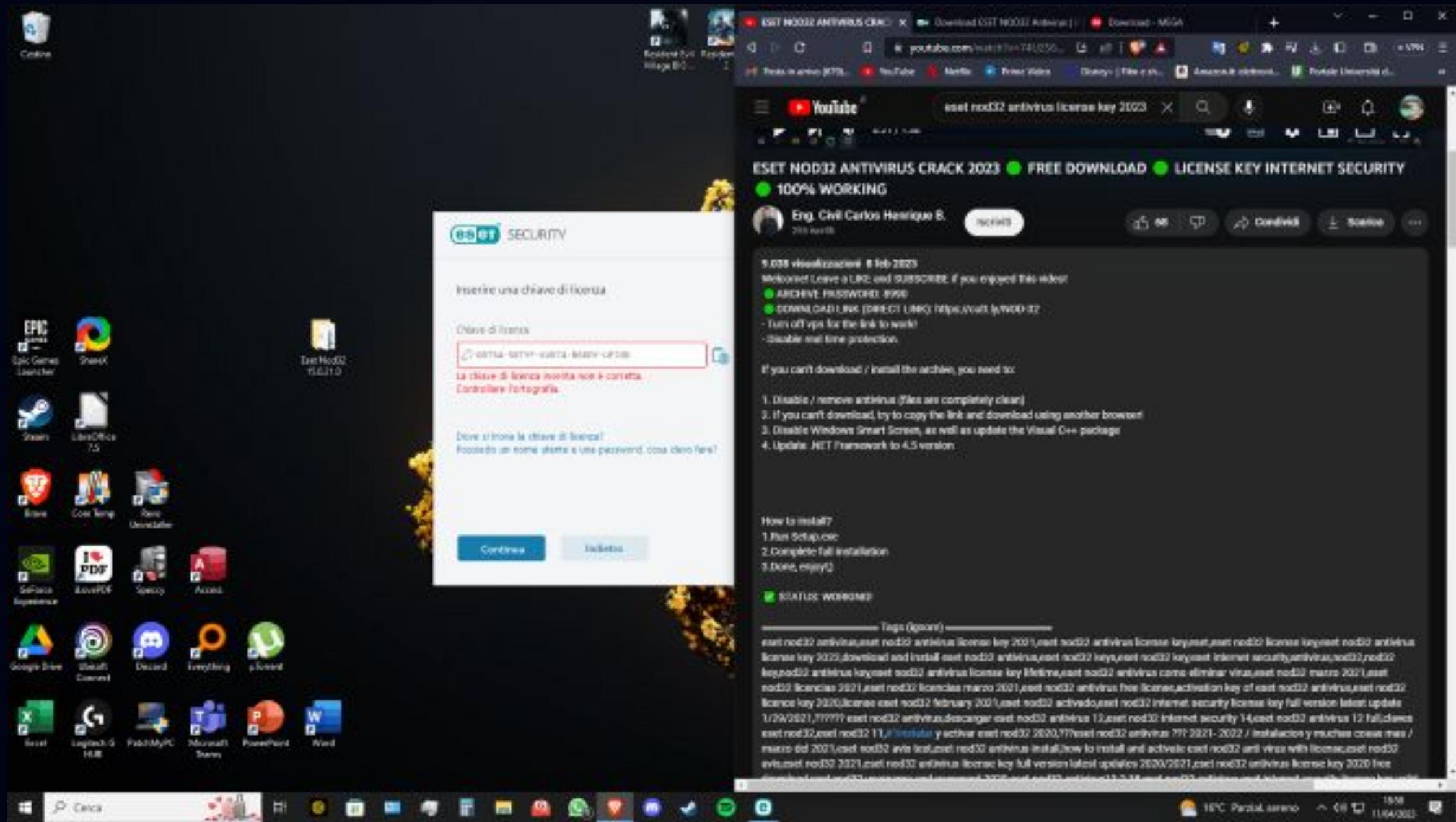
Ignore bookmarks. For each active browser tab in the top row, list in this format:

- [logo: {logo name}] [text: {visible text}] (meaning/context if apparent). If there is no text, put "X".



Suspicious Elements:

Highlight any file, executable, program, URL or download link that could contain malware. These could be youtube videos, blogs, google drive, etc.



Main Content:

The screenshot displays a computer desktop environment with an ESET Security window on the left side, prompting the user to input a license key. There is a red error message indicating that the entered license key is not correct. On the right side, there is a YouTube video titled "ESET NOD32 ANTIVIRUS CRACK 2023" which claims to offer a free download of a license key for ESET antivirus software. It includes a description with instructions for installation and cautionary steps such as disabling antivirus and Windows Smart Screen.

Files/Programs:

Installer: ESET NOD32 ANTIVIRUS CRACK 2023

File explorer: X

URL

1. <https://www.youtube.com/watch?v=HBG5nZQ7ThA>

Tabs

1. {Youtube} : [Download ESET NOD32 ANTIVIRUS CRACK 2023]
2. {ESET} [License key internet security 100% working]

Suspicious Elements:

- The YouTube video titled "ESET NOD32 ANTIVIRUS CRACK 2023" and the associated download link (<https://cutt.ly/NOD-32>) are highly suspicious, as they suggest accessing cracked software, which typically contains malware.
- The license key entry prompt in the ESET window may indicate that the user is following instructions from the video to illegally activate software.

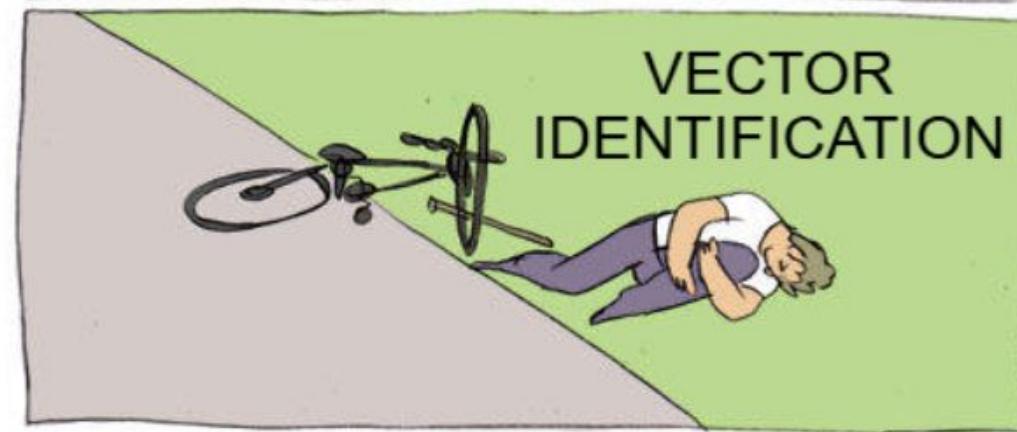
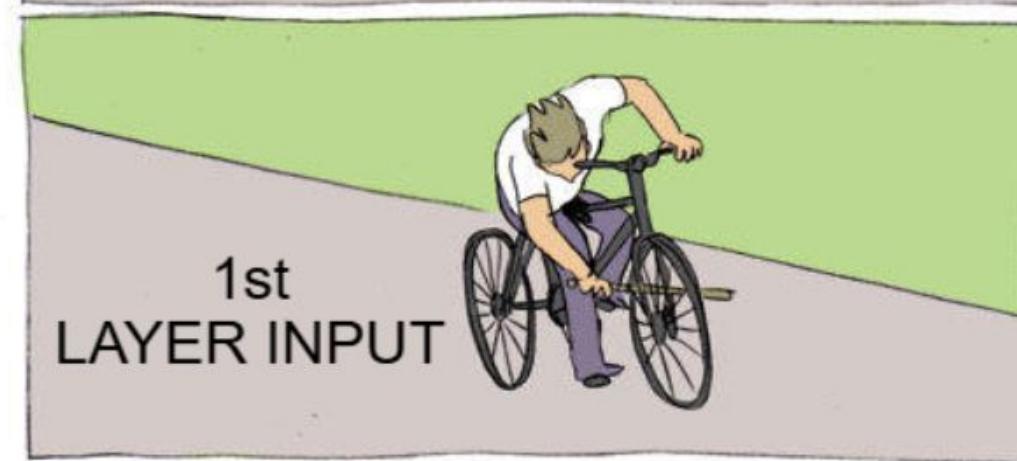
The first layer

Prompt

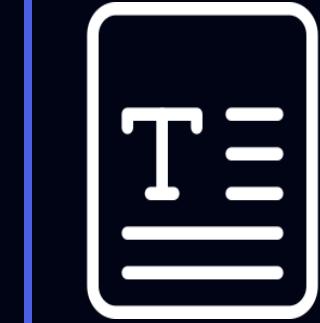
Web
Content

File
System

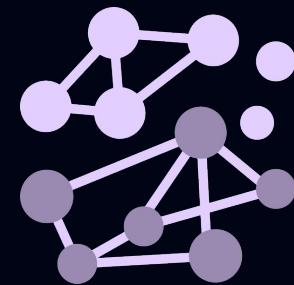
Hybrid



INPUT



Formatted
Description



Vector
Identification

The first layer

Prompt

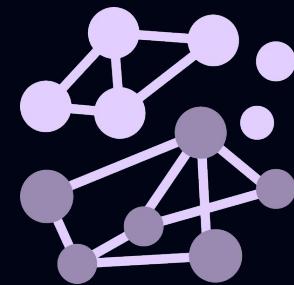
Web
Content

File
System

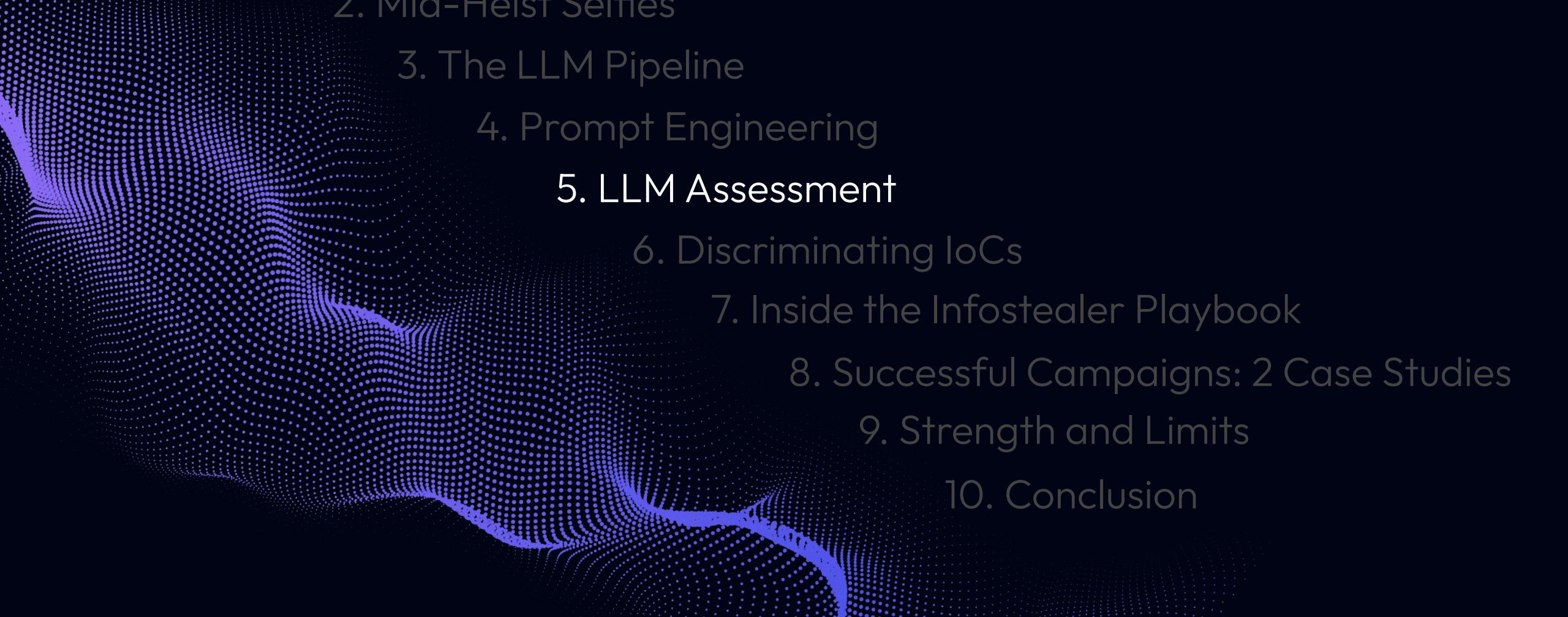
Hybrid



INPUT

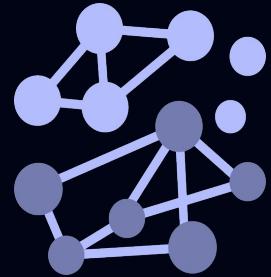


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The first layer

Evaluation



Visual
Assessment

96%



Scene Description

100%



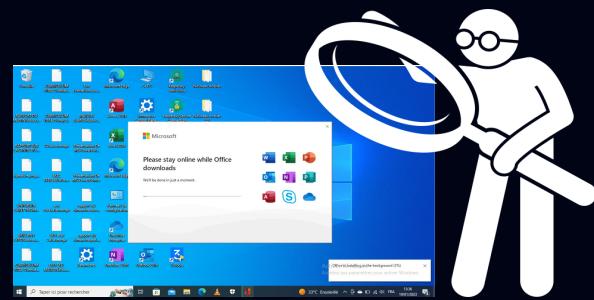
File Explorer & Installer

100%



URL

85%



Suspicious Elements



The first layer

Evaluation - Browser Tab Identification



30%



32%

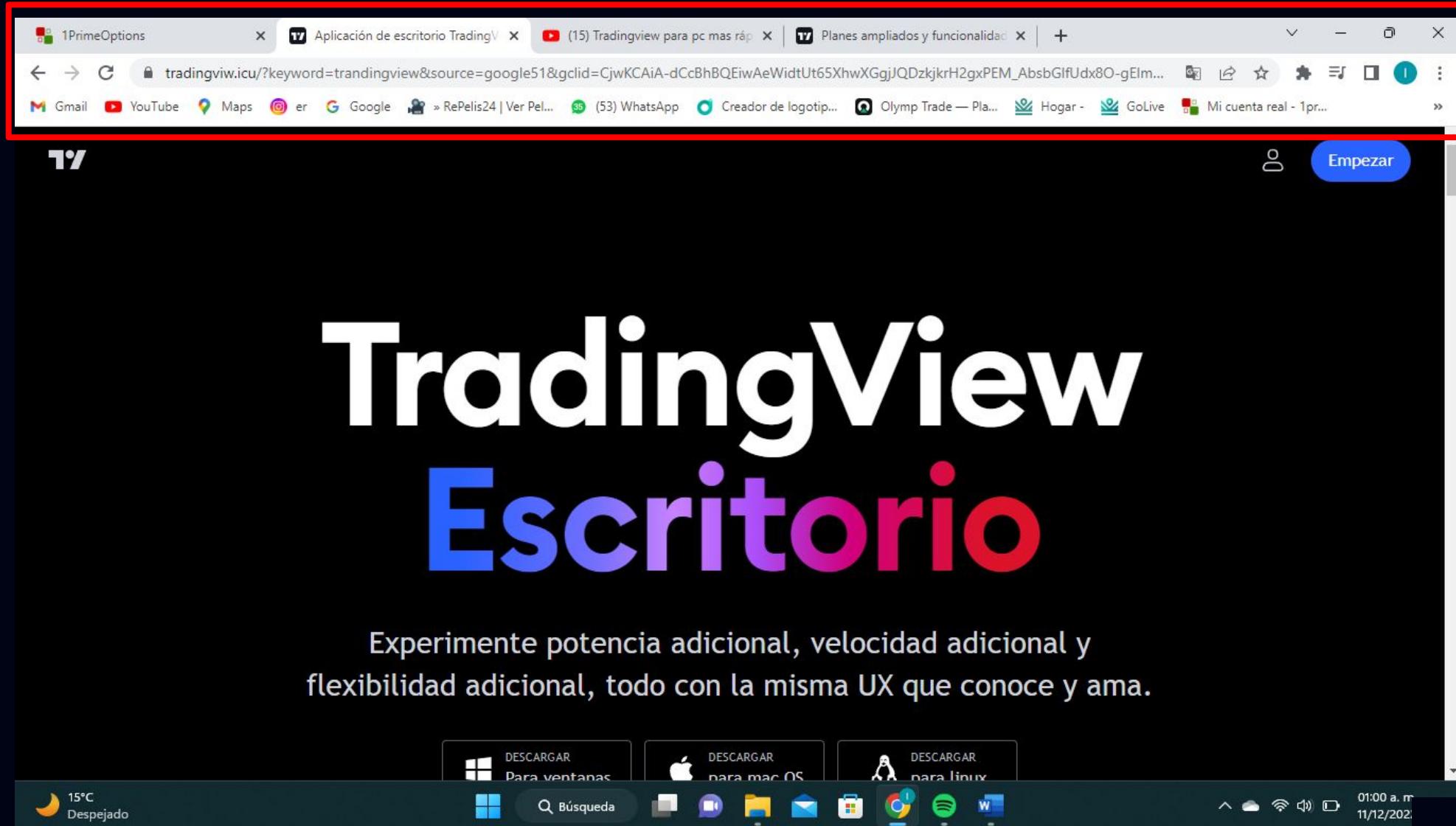


36%



The first layer

Evaluation - Browser Tab Identification - Case Study



The first layer

Evaluation - Browser Tab Identification - Case Study

The screenshot shows a browser window with several tabs open. The tabs are:

- 1PrimeOptions
- Aplicación de escritorio TradingView
- (15) Tradingview para pc mas rápido
- Planes ampliados y funcionalidad
- tradingviw.icu/?keyword=tradingview&source=google51&gclid=CjwKCAiA-dCcBhBQEiwAeWidtUt65XhwXGgjJQDzkjkrH2gxPEM
- Gmail
- YouTube
- Maps
- er
- Google
- RePelis24 | Ver Pel...
- (35) WhatsApp
- Creador de logotipo...
- Olymp Trade — Pla...

Below the tabs, there is a summary of the analysis:

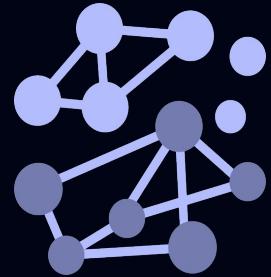
```
### Browser Tabs Analysis:

- [logo: TradingView] [text: Aplicación de escritorio TradingView] (A webpage for the desktop application of TradingView)
- [logo: YouTube] [text: (15) Tradingview para pc mas rápido] (A video related to using TradingView on PC)
- [logo: Google] [text: 1PrimeOptions] (A tab likely related to trading or financial information)
- [logo: WhatsApp] [text: (53)] (Notifications for WhatsApp)
- [logo: Google] [text: RePelis24 | Ver Pel...] (A site for watching movies or series)
- [logo: Google] [text: Creador de logotipo...] (Logo creator link)
- [unknown logo] [text: Olymp Trade — Pla...] (A financial trading platform)

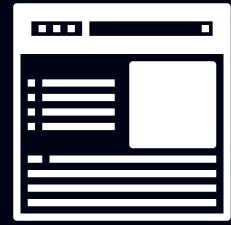
```

The first layer

Evaluation - Solution



Visual
Assessment



Scene Description



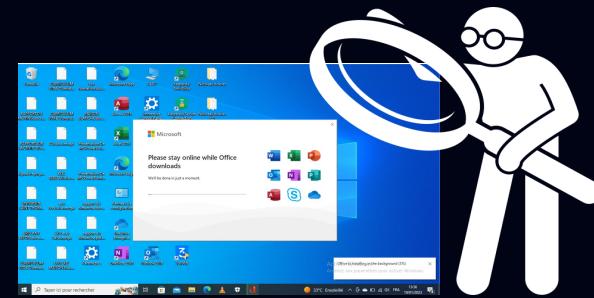
File Explorer & Installer



URL



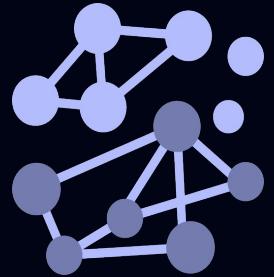
Evasion Lab Identification



Suspicious Elements

The first layer

Evaluation - Solution



Visual
Assessment



http://

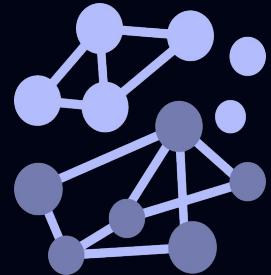

URL



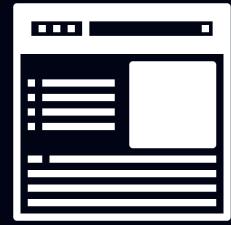
ents

The first layer

Evaluation - Solution



Visual
Assessment



Scene Description



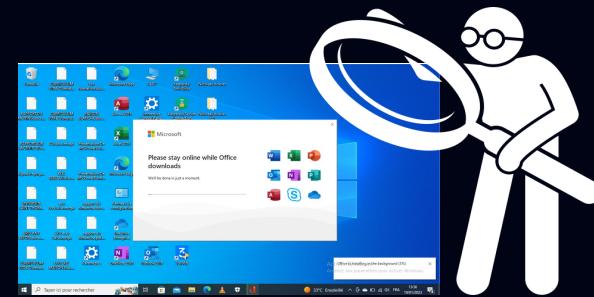
File Explorer & Installer



URL



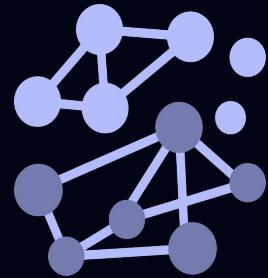
E vs. Mal lab Identification



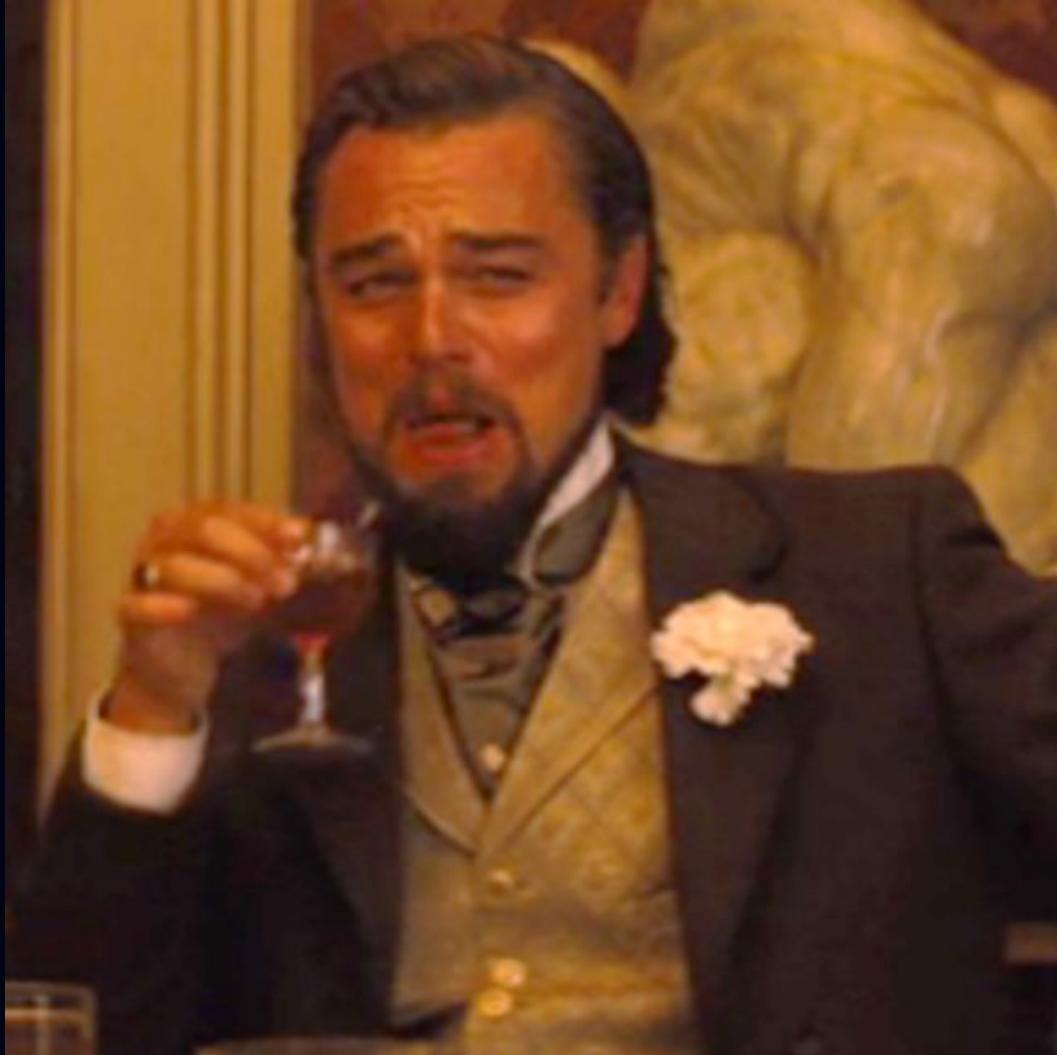
Suspicious Elements

The first layer

Evaluation - Solution



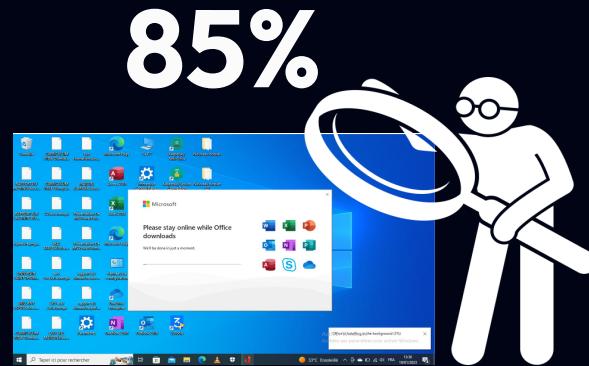
Visual
Assessment



File & Installer



URL



Suspicious Elements

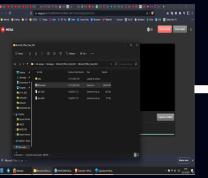
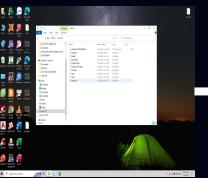
The first layer

Evaluation

Web
Content

File
System

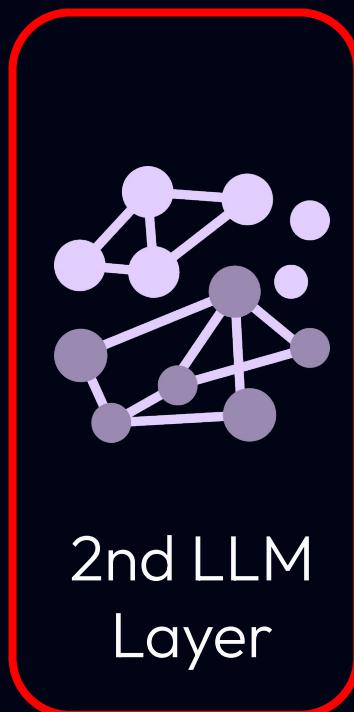
Hybrid



Visual
Assessment

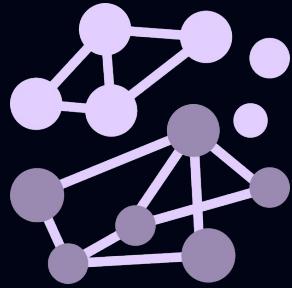


Formatted
Description

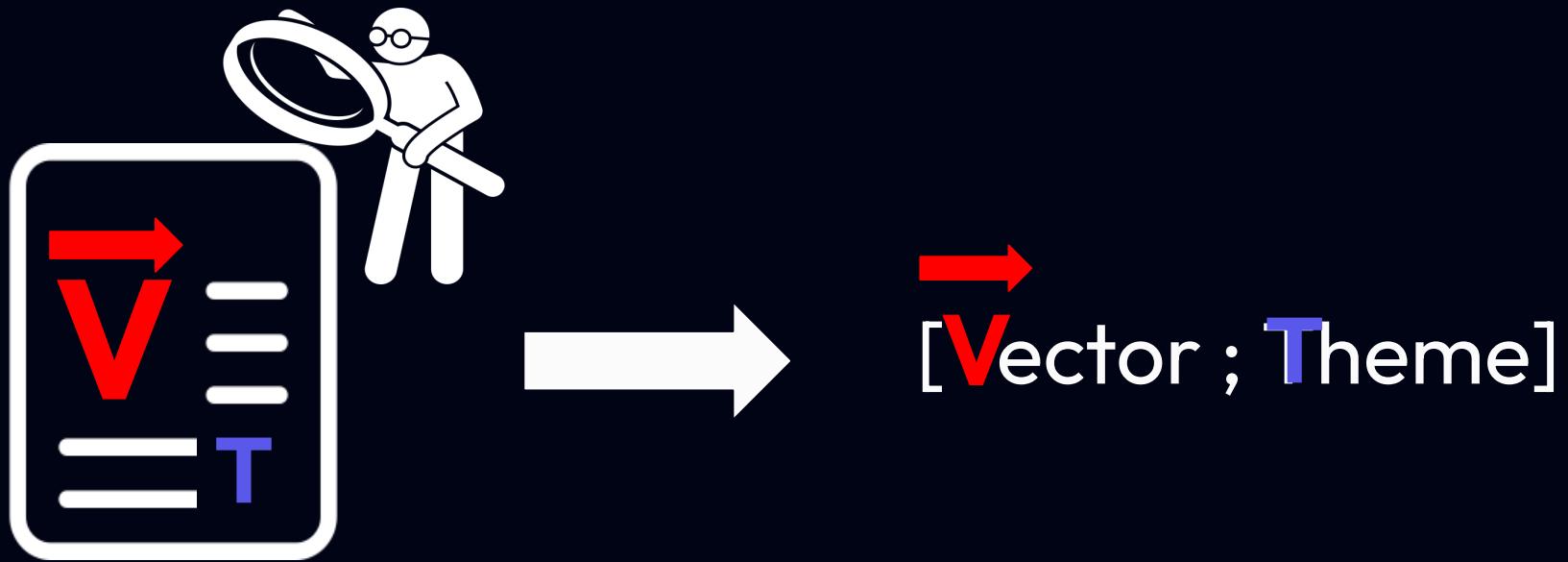


THE 2ND LAYER

THE LLM LAYERS



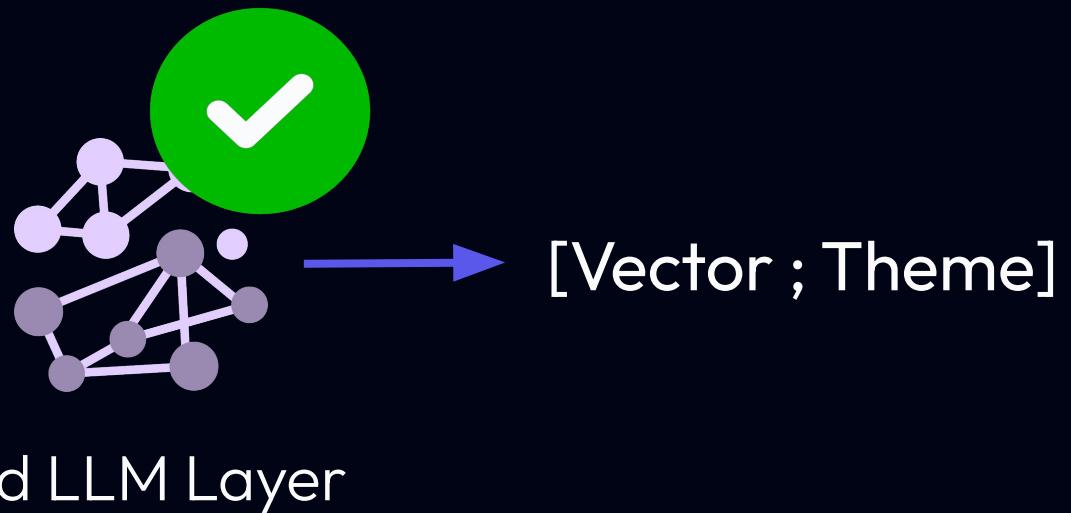
Vector identification
+ formatting



V <https://mega.nz/folder/GEkRCKaT#f93dJ6myfe3fENhDS4wqxQ;>
T [KMSAuto++ v1.8.7 for Microsoft product activation](#)

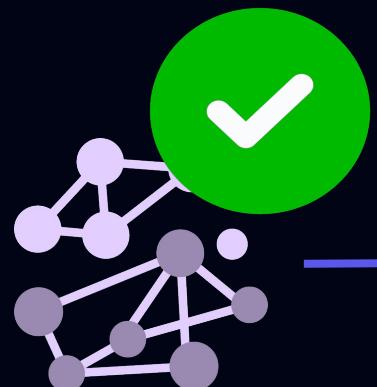
Getting out the trash

Discriminating loCs



Getting out the trash

Discriminating loCs



→ [Vector ; Theme]

2nd LLM Layer



Getting out the trash

Discriminating loCs

<https://gamesharing.com>

loC - https..



<https://mediafire.com>



2nd L

loc

<https://zdescargas.com>



Getting out the trash

Discriminating a loC

<https://getloC.com>

loC - https://getloC.com



<https://mediafire.com>



2nd L

loC

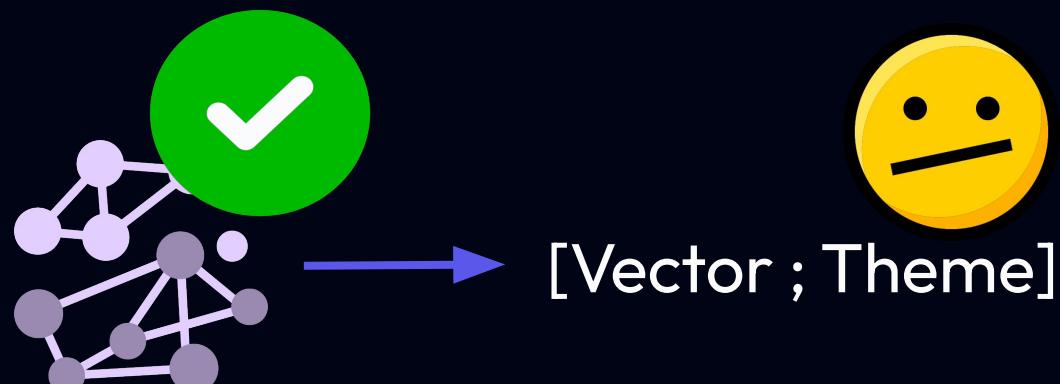
<https://zdescarga.com>

TRIGGERED



Getting out the trash

Discriminating loCs

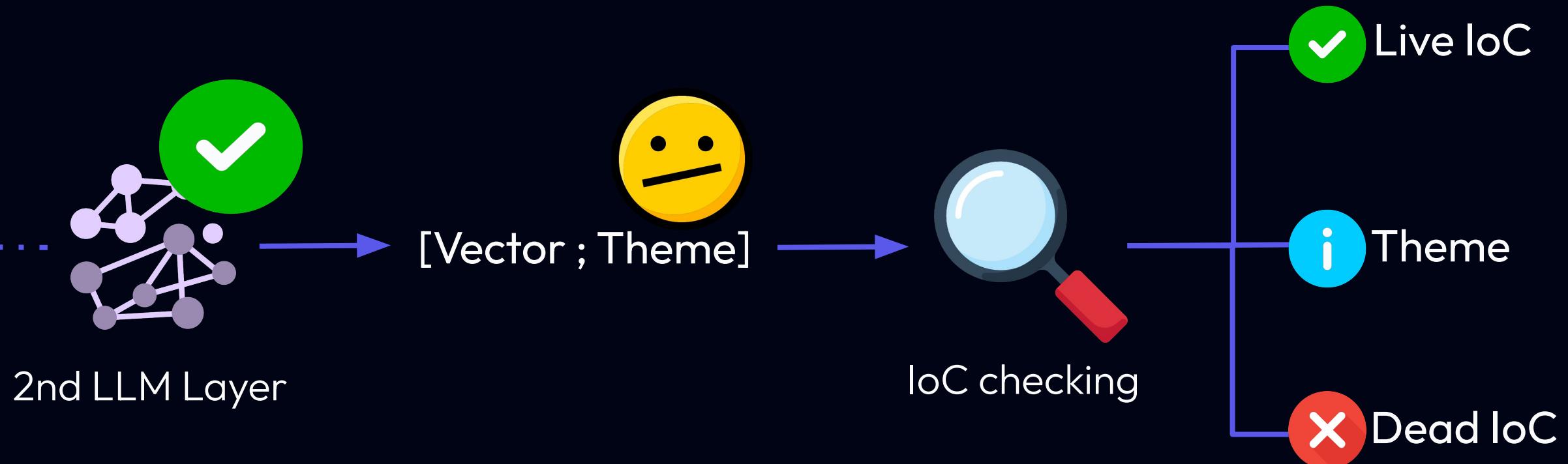


2nd LLM Layer

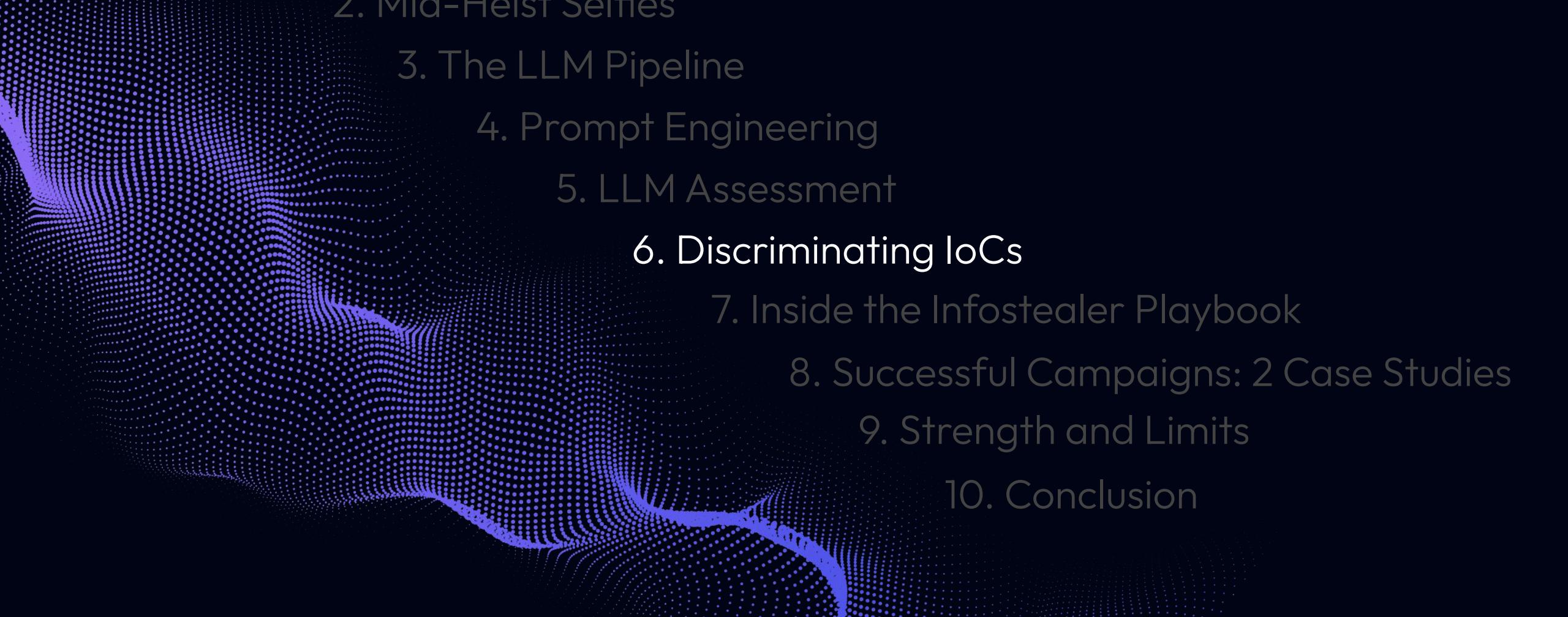


Getting out the trash

Discriminating loCs



Agenda

- 
- A large, abstract graphic on the left side of the slide consists of a grid of small, glowing blue dots. These dots are arranged in a way that creates a sense of depth and motion, resembling a digital wave or a network of data points. It serves as a decorative background for the agenda list.
1. The Information Stealer Malware Phenomenon
 2. Mid-Heist Selfies
 3. The LLM Pipeline
 4. Prompt Engineering
 5. LLM Assessment
 6. Discriminating IoCs
 7. Inside the Infostealer Playbook
 8. Successful Campaigns: 2 Case Studies
 9. Strength and Limits
 10. Conclusion

Getting out the trash

Discriminating loCs



loC checking



File sharing platforms



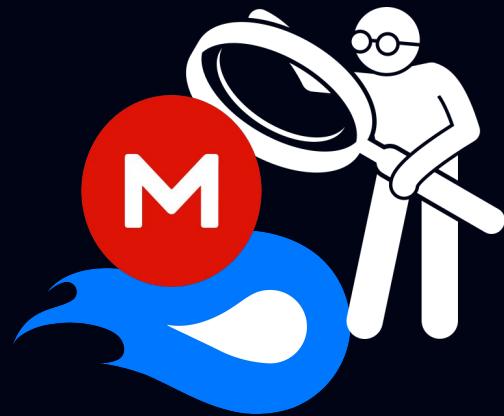
YouTube Videos



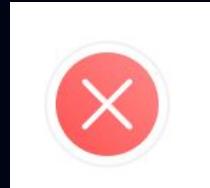
Others

Getting out the trash

Discriminating loCs



loC checking



The file you are trying to download is no longer available

- This link is unavailable as the user's account has been closed for gross violation of MEGA's [Terms of Service](#).



The file you are trying to download is no longer available

This could be due to the following reasons:

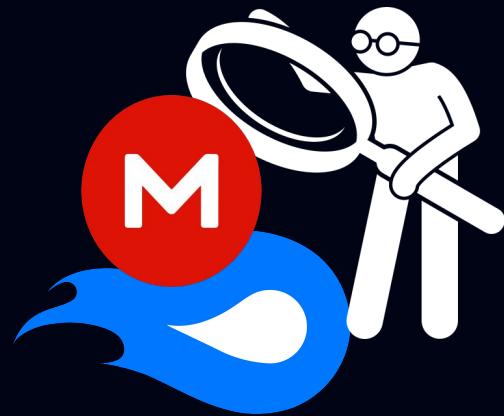
- The file has been removed as it violated our Terms of Service.
- Invalid URL - the link you are trying to access does not exist.
- The file has been deleted by the user.



Dead loC

Getting out the trash

Discriminating IoCs



IoC checking

Search

Save to MEGA Download

Setup

<input type="checkbox"/>	Name	Date added	Type	Size
<input type="checkbox"/>	Password - 2025.txt	4/21/2025, 16:55	Text	0 B
<input type="checkbox"/>	SoftwareDownload+(Password - 202...	6/29/2025, 08:32	RAR compressed	4.0 MB

Enter decryption key

To access this link, enter the decryption key. If you don't have it, contact the person who shared the link with you.

Decryption key

The decryption key is invalid or doesn't match this link

Decrypt



Live IoC

Getting out the trash

Discriminating IoCs



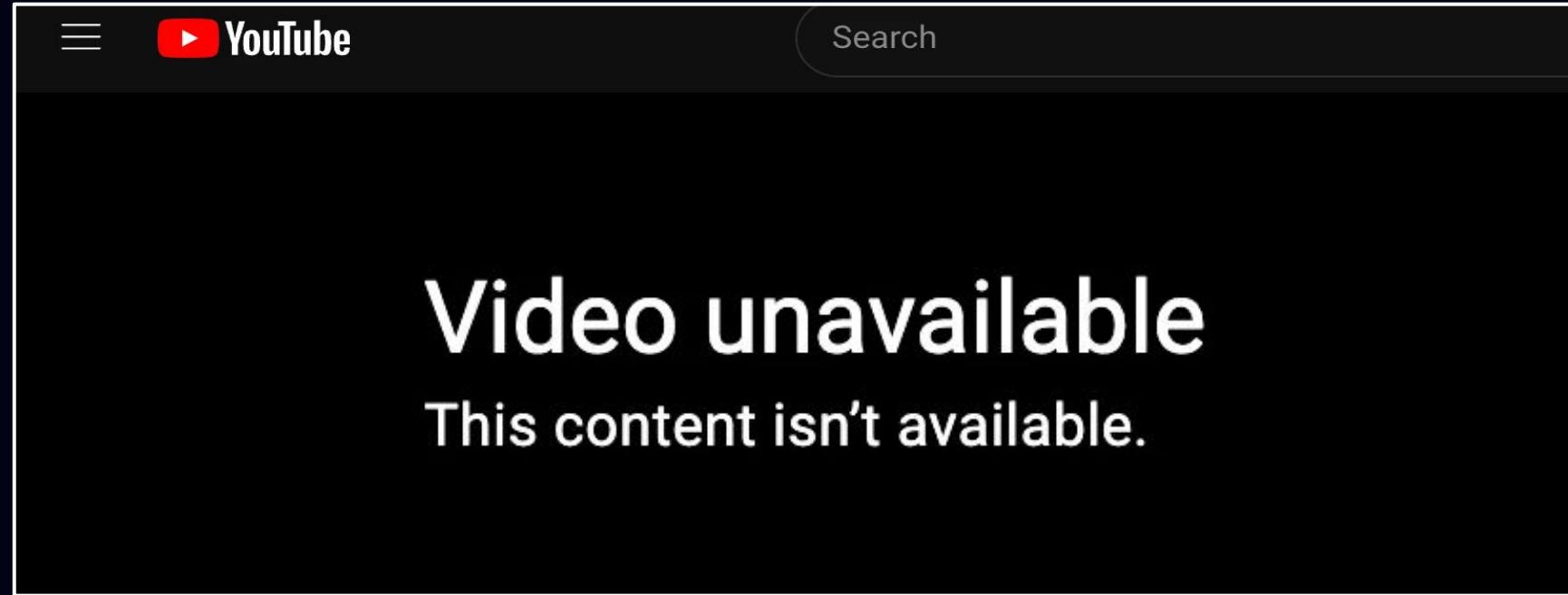
IoC checking

A screenshot of a web browser displaying a news article from [fixerrort.com](https://www.fixerrort.com/2024/07/fivem-fix-gta5_b3905exesub_1407a07c8-0x43.html). The page title is "FiveM Fix GTA5_b3905.exe!sub_1407A07C8 (0x43)!". The "Download" button is highlighted with a red box and a green arrow points down to a green circle containing a white checkmark, indicating a successful download.

Live IoC

Getting out the trash

Discriminating loCs



IoC checking



Getting out the trash

Discriminating IoCs



IoC checking

Microsoft Office Crack Free Download Full Version 2022

33 vues 31 oct. 2022

Welcome! Leave a LIKE and SUBSCRIBE if you enjoyed this video!

ARCHIVE PASSWORD: 7521

DOWNLOAD LINK (DIRECT LINK): <https://bit.ly/3N8nHDp>



Live IoC

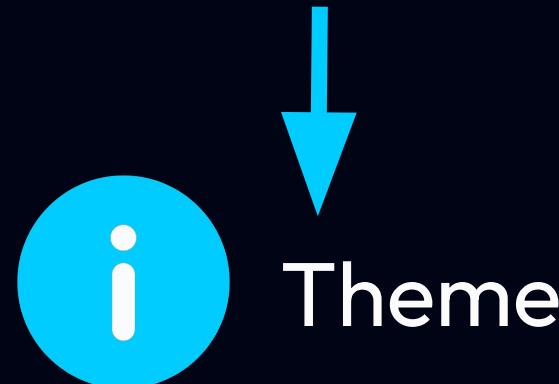
Getting out the trash

Discriminating IoCs



IoC checking

A screenshot of a YouTube video page. The title is "Microsoft Office Crack Free Download Full Version 2022". Below the title is a profile picture of a person with a sunset background, the name "V4ctor", and a "S'abonner" button. The video stats show "33 vues 31 oct. 2022". A message at the bottom encourages viewers to "Leave a LIKE and SUBSCRIBE if you enjoyed this video!". Below that is the text "ARCHIVE PASSWORD: 7521". A red rectangular box highlights the password text.



DEMO

Jul 24 15:42

100%

python -m fetch_scre ~/f/r/s/stealerlogs_ioc_feed

python -m fetch_scre ~/f/r/s/stealerlogs_ioc_feed

~/f/r/s/stealerlogs_ioc_feed

python -m fetch_scre ~/f/r/s/stealerlogs_ioc_feed 118x29

(stealerlogs-ioc-feed) obilodeau@sparkle ~/f/r/s/stealerlogs_ioc_feed (main)> python -m fetch_screens.refactored_pipeline.fetch_analyze --download-screens --open-screens --openai-response --delay 10

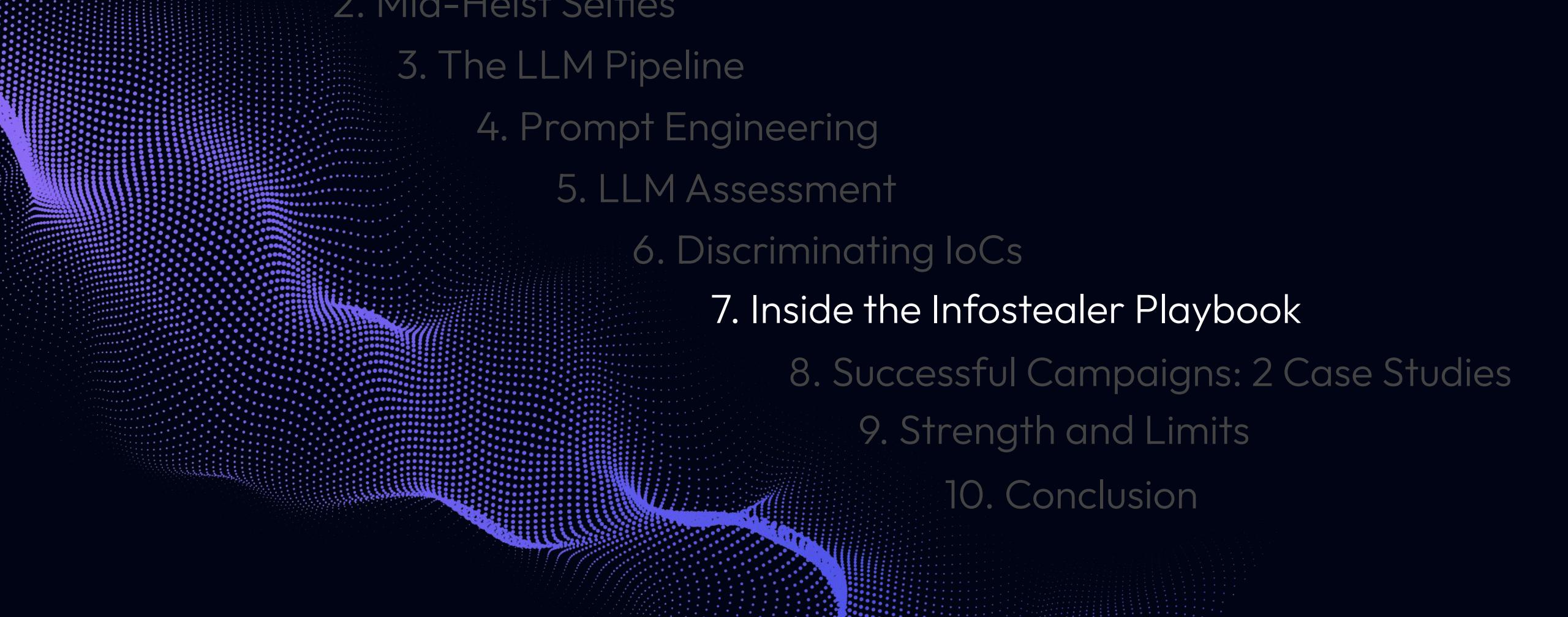
NOW



LET THE LLM DO THE WORK

Ode
Eternity
Later

Agenda

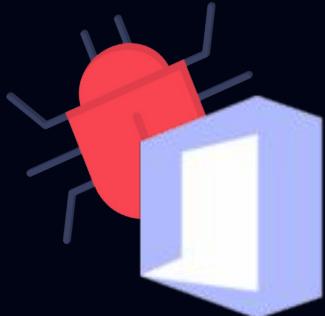
- 
1. The Information Stealer Malware Phenomenon
 2. Mid-Heist Selfies
 3. The LLM Pipeline
 4. Prompt Engineering
 5. LLM Assessment
 6. Discriminating IoCs
 7. Inside the Infostealer Playbook
 8. Successful Campaigns: 2 Case Studies
 9. Strength and Limits
 10. Conclusion

Lure Themes - Cracked Software

Lure Themes - Cracked Software



 **Office**
\$\$\$\$

 **Office**
Cracked
0\$

Lure Themes



Paying \$150
for lifetime access
to a secure,
legitimate license
from a globally
recognized corporation.

Free_Microsoft_Office_Crack.rar



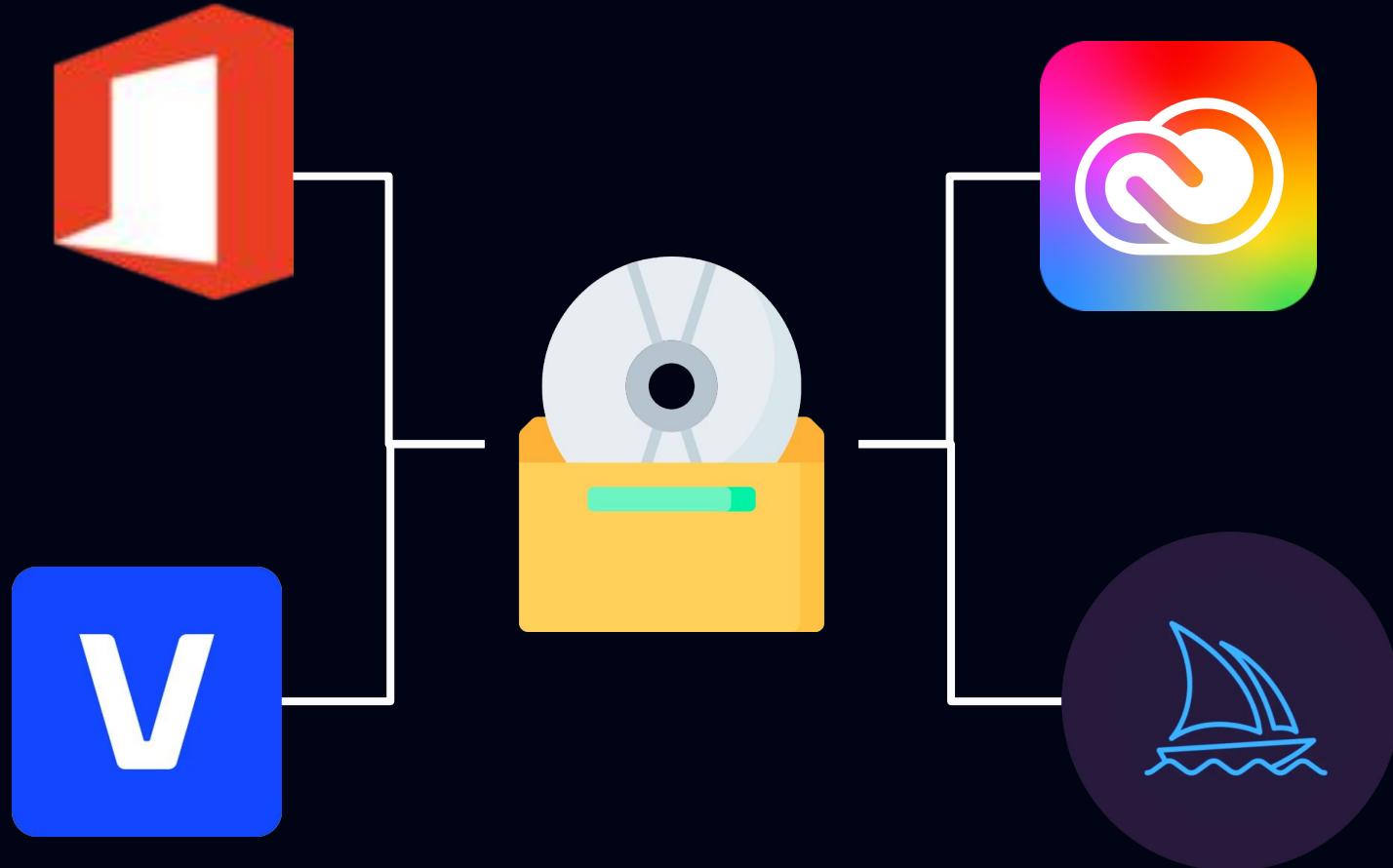
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ked

Lure Themes - Cracked Software

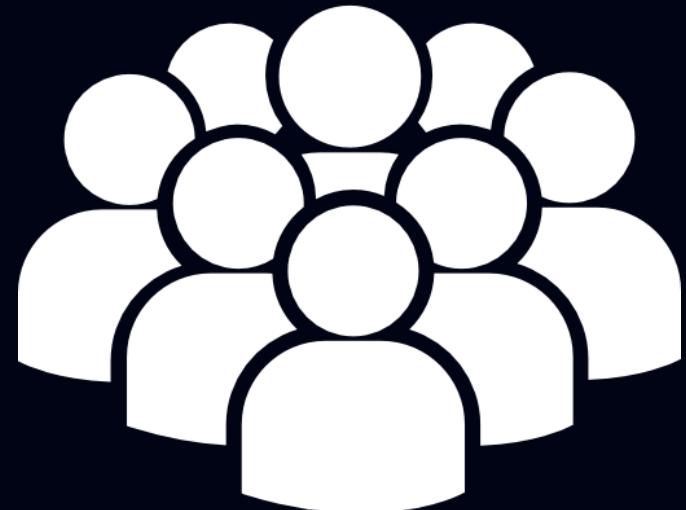
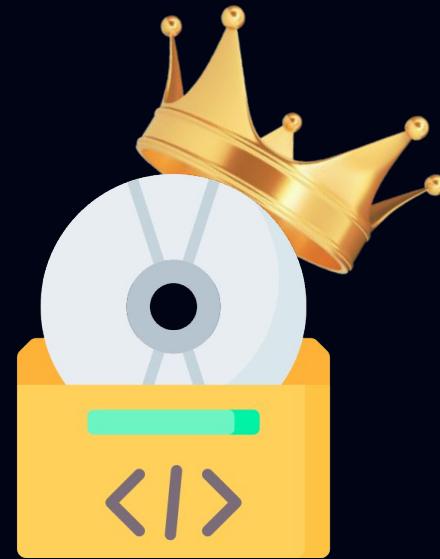


Threat actors prey on users' willingness to bypass legitimate licensing fees at the cost of their own security

Lure Themes - Cracked Software



Lure Themes - Cracked Software



MAINSTREAM

Infostealer Playbook - Lure Themes

Targeting mainstream products ensures
large pool of potential victims

Lure Themes - Gaming Cheats & Mods

Lure Themes - Gaming Cheats & Mods



Lure Themes - Gaming Cheats & Mods



Lure Themes - Gaming Cheats & Mods



Lure Themes - Gaming Cheats & Mods



Skins



Weapons



Mods

Lure Themes

If it's free and shady, you're likely the victim

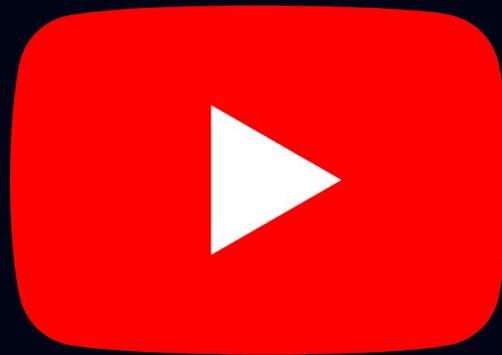
Distribution Strategies -

YouTube as a Distribution System

Distribution Strategies - YouTube as a Distribution System



BEST FORTNITE HACKS 2025 | AIM LIKE A PRO! FREE & EASY SETUP | 100% SAFE 



**BEST FREE FORTNITE CHEAT 2025 |
SILENT AIM + ESP | UNDETECTED** 

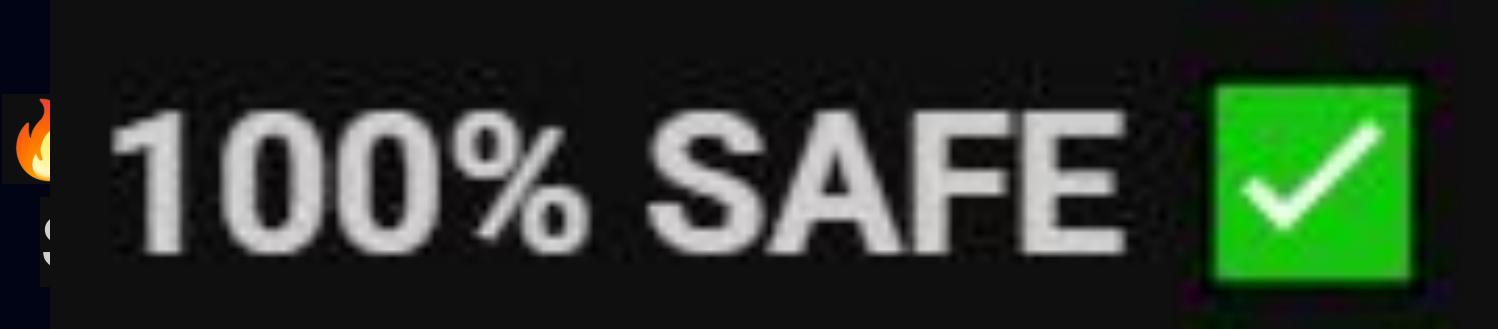
 **MICROSOFT 2022 CRACK (GENUINE + 100% FREE)** 

Distribution Strategies - YouTube as a Distribution System



BEST FORTNITE HACKS 2025 | AIM LIKE A PRO! FREE & EASY SETUP | 100% SAFE 

SEEMS LEGIT

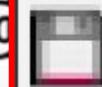


22 CRACK (GENUINE + 100% FREE) 

SHGZC



Download the archive link in the description



DOWNLOAD LINK:

<https://telegra.ph/FORTNITE-H4CK-FREE-DOWNLOAD-09-11>



ARCHIVE PASSWORD: shgzcheat



FORTNITE HACK | UNDETECTED | FORTNITE MOD MENU | DOWNLOAD FREE



SS&B

78 subscribers

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17

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267 views 8 Dec 2022

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<https://telegra.ph/FORTNITE-H4CK-FREE-DOWNLOAD-09-11>

🔒 ARCHIVE PASSWORD: shgzcheat

Working

Ctrl+C

Copy

Copy link to highlight

Go to https://telegra.ph/FORTNITE-H4CK-FREE-DOWNLOAD-09-11

Print...

Inspect...

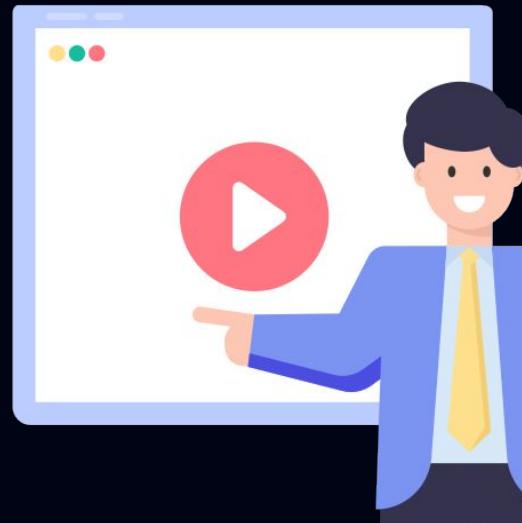
👉 Instructions:

- 1) Download the archive.
- 2) Unzip the file to any folder/desktop.

👉 Instructions:

- 1) Download the archive.
- 2) Unzip the file to any folder/desktop.

Distribution Strategies - YouTube as a Distribution System



It is free



It works



Disabling antivirus is
needed & safe

Distribution Strategies - YouTube as a Distribution System



It is free



It works



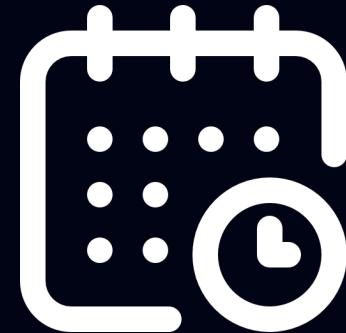
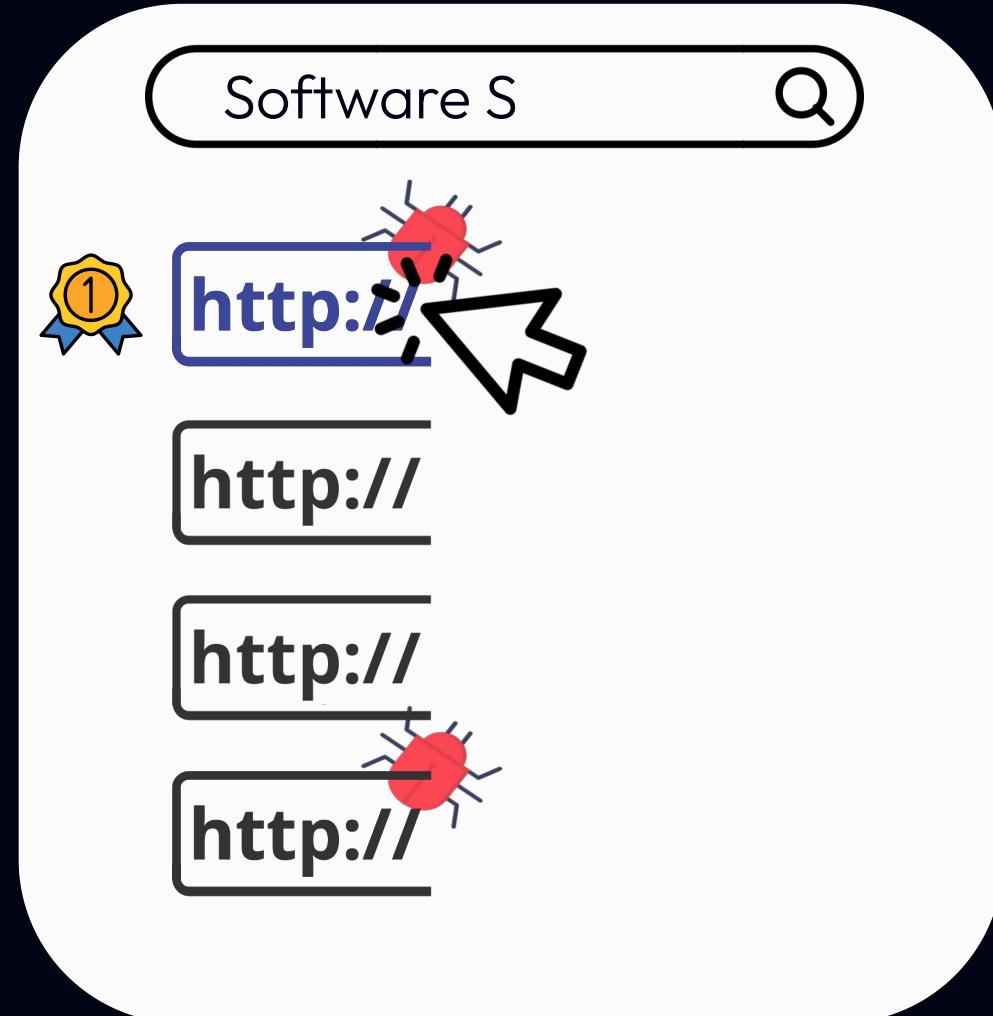
Disabling antivirus is
needed & safe

Distribution Strategies - YouTube as a Distribution System

YouTube's reach and tutorial-driven-content make it the perfect launchpad for infostealer malware

Distribution Strategies - Google Ads

Distribution Strategies - Leveraging Google Ads



sans titre - Story Book x . midjourney - Recherche Google x +

google.com/search?q=midjourney&rlz=1C1VDKB_frFR1054FR1054&oq=midjurny&aqs=chrome.1.69i57j0i

Gmail YouTube 지도

Google 기능

생산적인 개발에 필요한 모든 기능

함께 검색한 항목

- java 최신버전 java란
- java 무료버전 java ... parameter
- Java -cp java -jar 실행
- 자바 다운로드 자바 코딩

광고 · https://go.java-gapp.space/ ▾

Switch to Java - Java Download

Java is a reliable and powerful programming language that provides convenient programming.

Java is a platform for creating analytical and consumer with extensive capabilities.

광고 · http://www.ikosmo.co.kr/ ▾

한국소프트웨어인재개발원 - java - ikosmo.co.kr

국비지원100%, IT무료교육, 구직자, 실업가, 직장인 ITR실무교육, 4차산업혁명 선도인력양성. 고용노동부IT우수훈련기관, 100%국비무료, 기초부터 실무, 1:1취업매칭, java.

청소년에게 유해한 결과는 제외되었습니다. 만 19세 이상의 사용자는 성인인증을 통해 모든 결과를 볼 수 있습니다.

사용자 성인인증 임시 성인인증

https://www.java.com > ... ▾

Java 다운로드

Search

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midjourney

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- midjourney ai midjourney #macron
- midjourney gratuit midjourney how to use
- midjourney discord midjourney prix

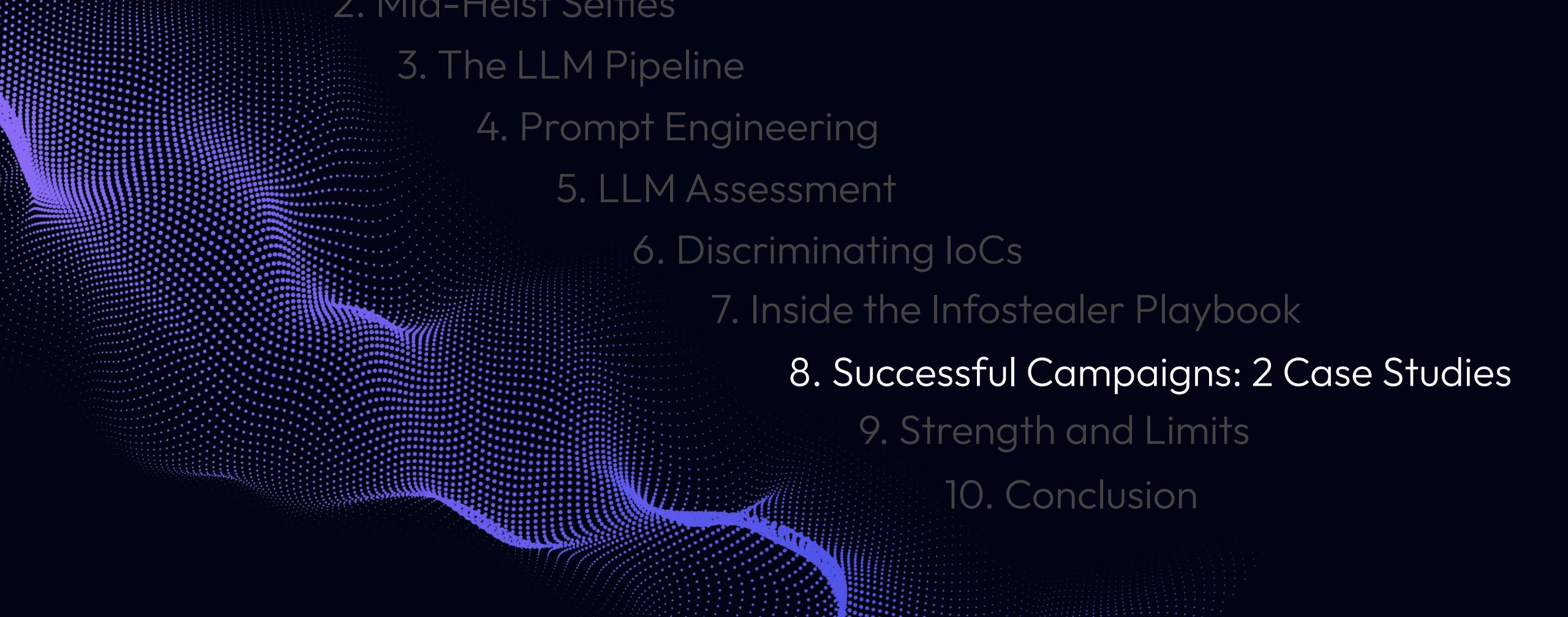
Midjourney

Midjourney is an independent research lab exploring new mediums of thought and expanding the imaginative powers of the human species.

Distribution Strategies - Leveraging Google Ads

Google Ads give threat actors a fast lane to users' trust – by placing malicious content where users expect safety: at the top.

Agenda

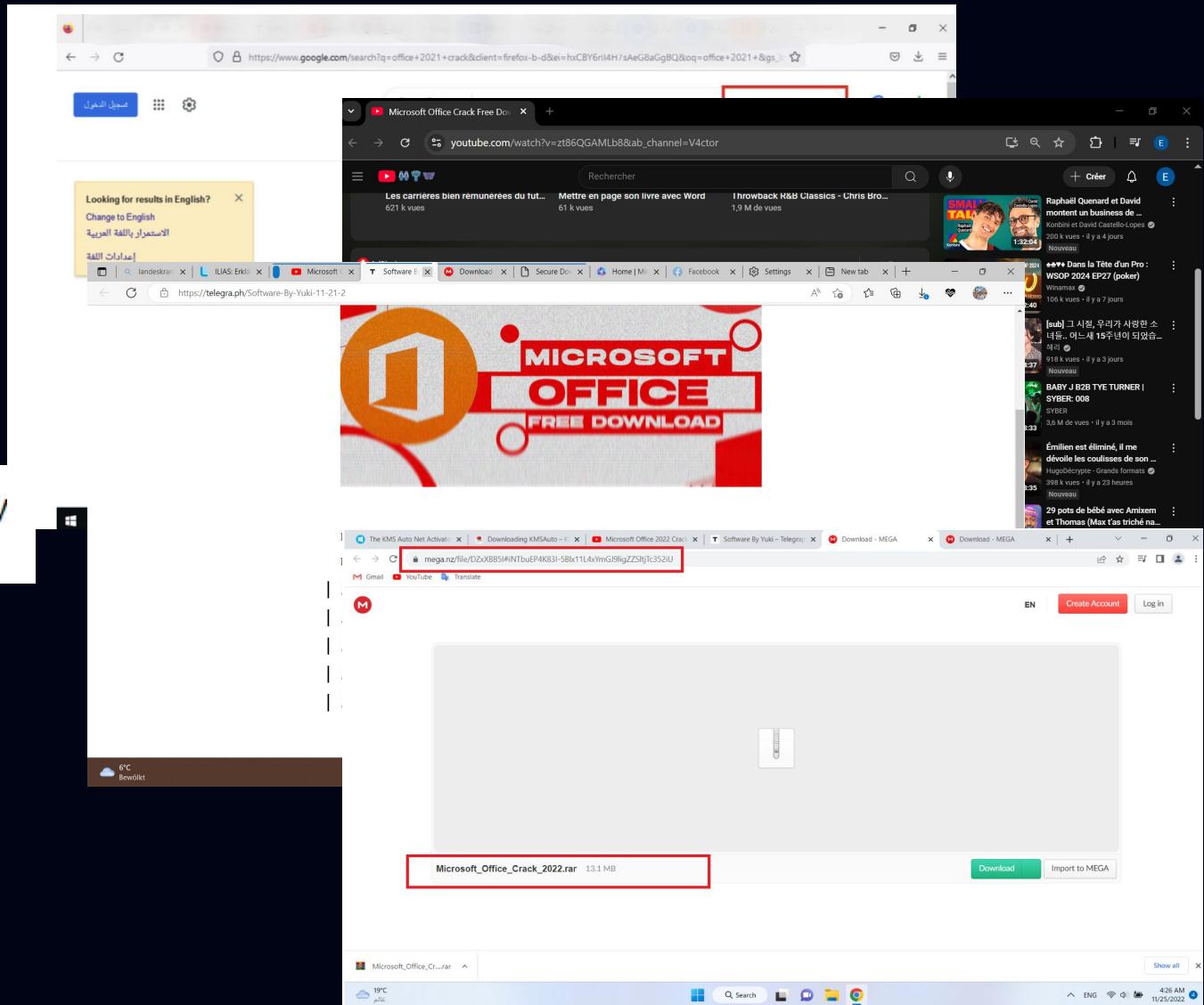
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Successful Campaigns: 32 Case Studies

IoC - <https://mega.nz/folder/GErKCTaT#9dGmye>
Theme - Microsoft 2022

IoC - <https://mega.nz/folder/GErKCTaT#9dGmy>
Theme - Microsoft 2022 Cracked Free

IoC - <https://mega.nz/folder/GErKCTaT#9dGmye>
Theme - Yuki Microsoft 2022 DOWNLOAD



Successful Campaigns: 3 Case Studies



MidJourney

6.3%



Blitz Java

5.3%



MidJourney



Blitz Java





X Microphone Camera

- 🕒 midjourney **prompts with results**
- 🕒 midjourney **when blending with two text prompts, what do you put between them.**
- 🕒 midjourney **what are some of the best user prefer option set examples**
- 🔍 midjourney **ai**
- 🔍 midjourney **bot**
- 🔍 midjourney **discord**
- 🔍 midjourney **v5**
- 🔍 midjourney **api**
- 🔍 midjourney **free**
- 🔍 midjourney **v4**

Google Search I'm Feeling Lucky

Report inappropriate predictions

← → X google.com/search?q=midjourney&rlz=1C1VDKB_frFR1054FR1054&oq=midjurny&aqs=chrome.1.69i57j0i10i433i512i3j0i10i131i433i512i2j0i10i512j5.5553j0j7&so...

Google midjourney

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- midjourney image
- midjourney bot
- midjourney ai
- midjourney #macron
- midjourney gratuit
- midjourney how to use
- midjourney discord
- midjourney prix

Midjourney

Midjourney est un laboratoire de recherche indépendant qui produit un programme d'intelligence artificielle sous le même nom et qui permet de créer des images à partir de descriptions textuelles, suivant un fonctionnement similaire à celui de DALL-E d'OpenAI. [Wikipédia](#)

Créateur : Midjourney
Première version : 2022

Unleash Your Creativity with MidJourney's AI-powered Images!

[Download for Windows](#)

This is an open beta version of the program,
it is possible that the computer's security systems may falsely trigger, which is a common problem for all software that is in beta testing.
The open beta version is only available on Windows.

It is possible that the computer's security systems may FALSELY trigger

FAQ.

How do I make a request using MidJourney's AI?

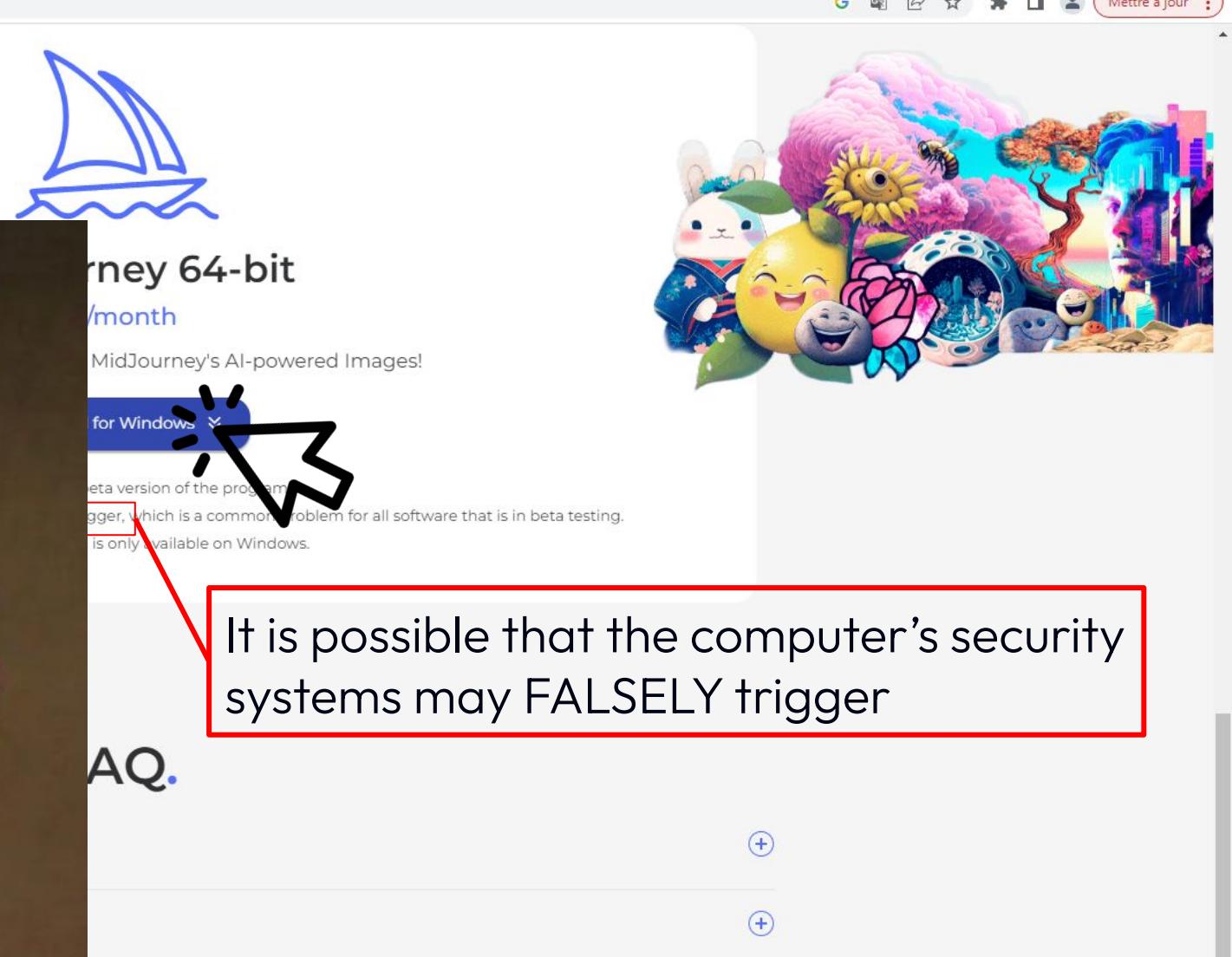
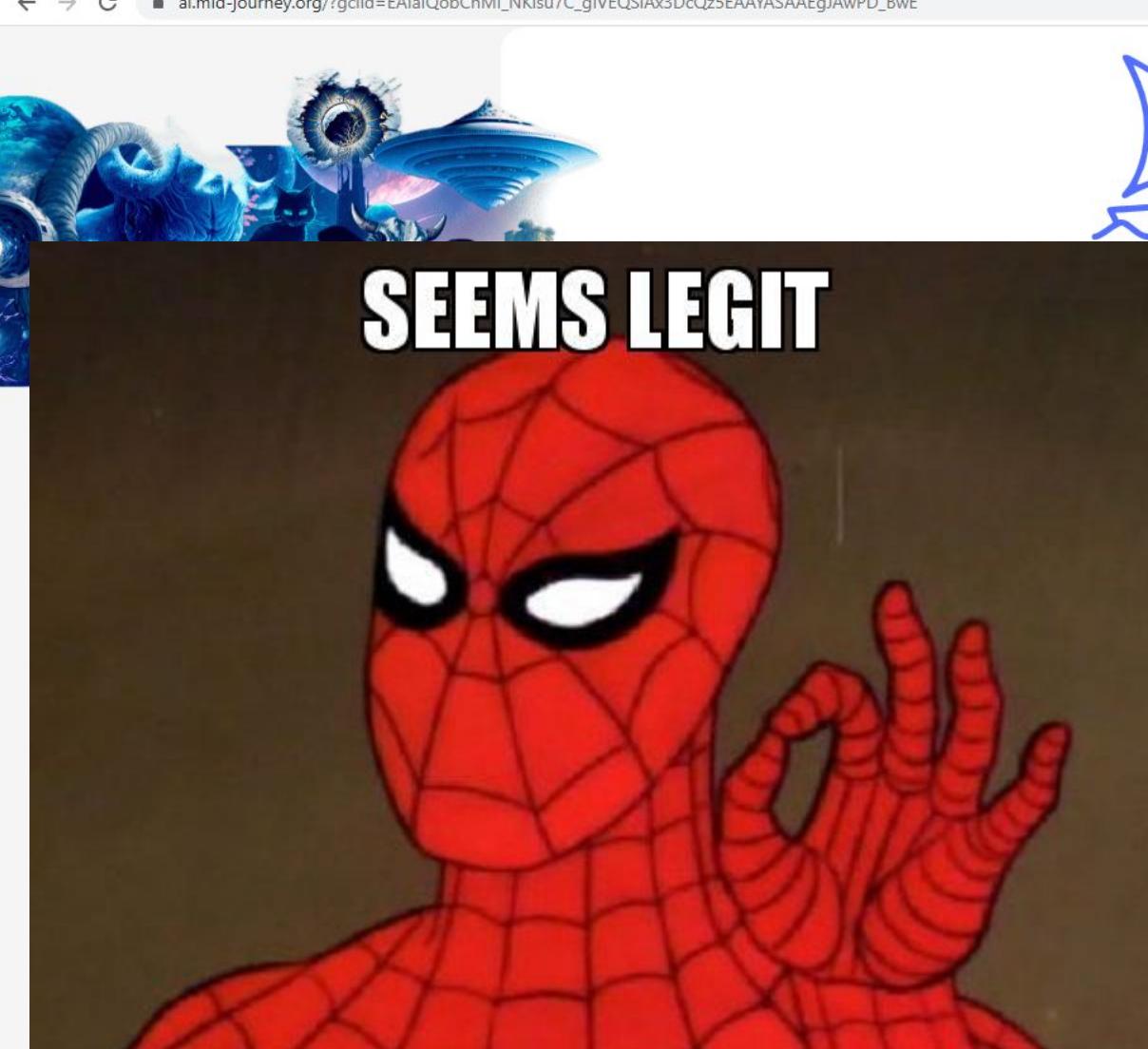


What stock images can I find on MidJourney



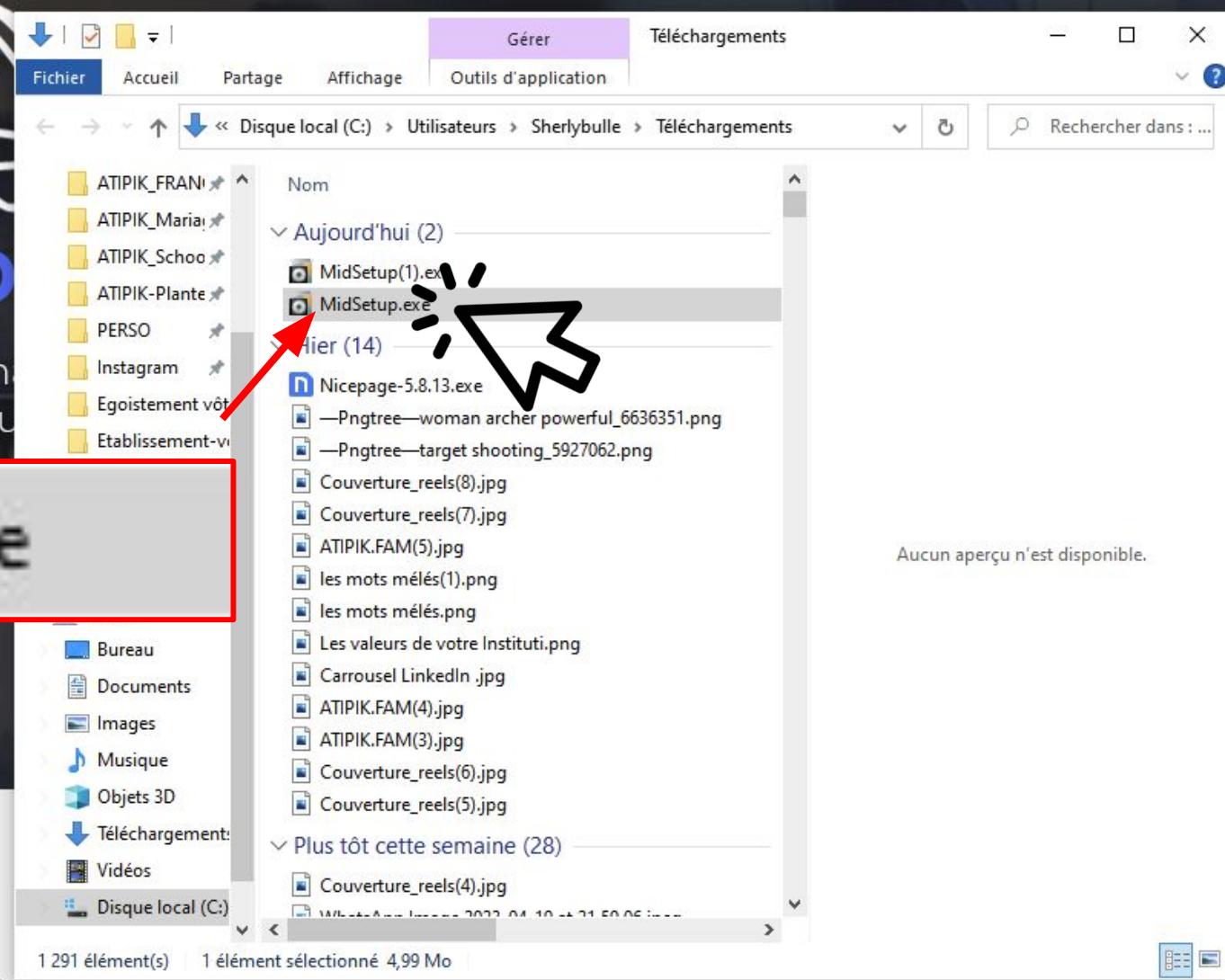
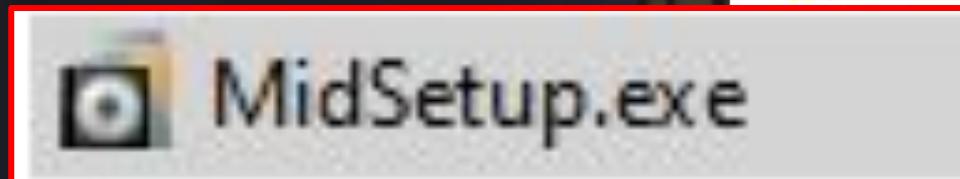
How can I use MidJourney's images?



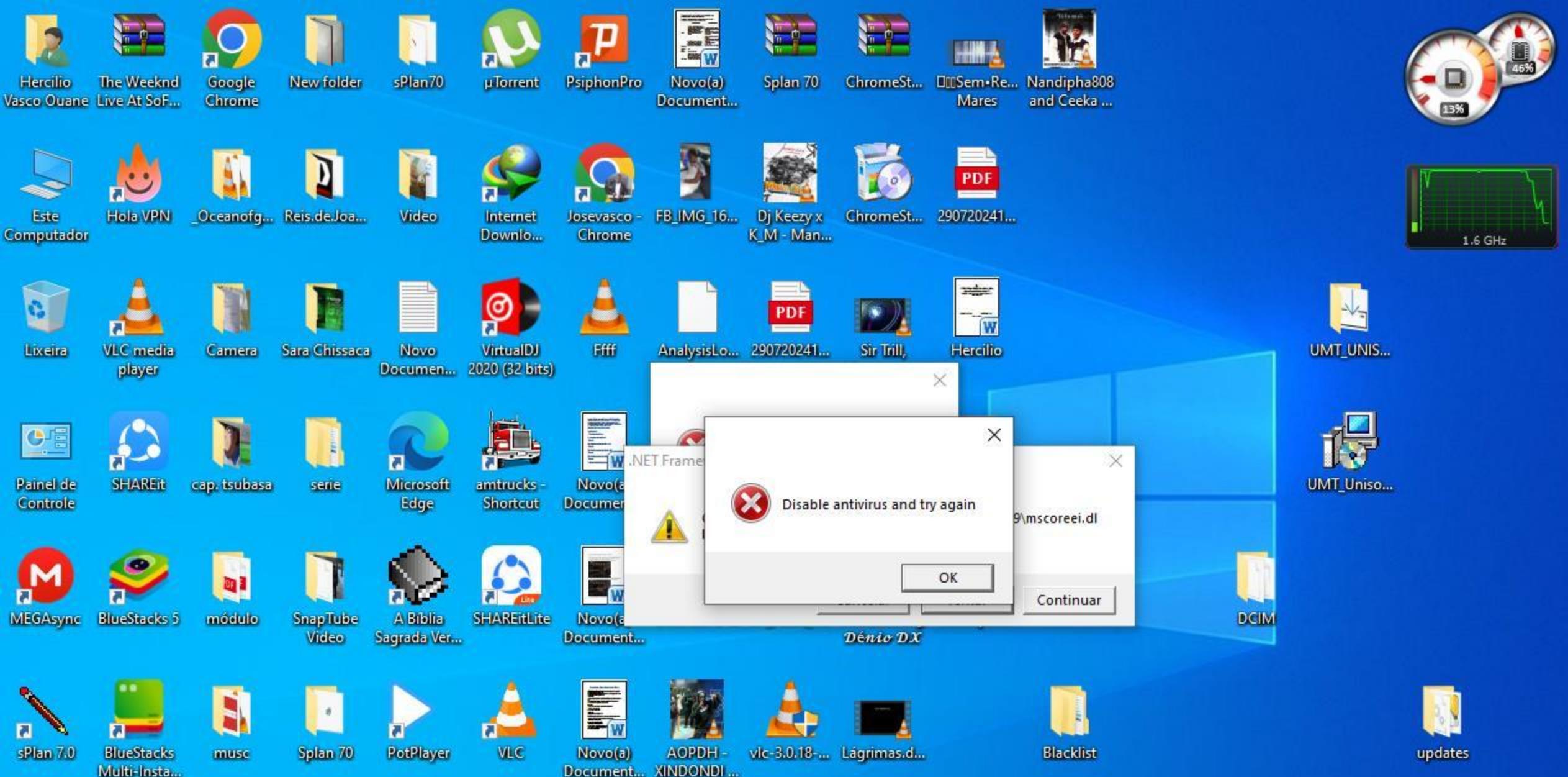


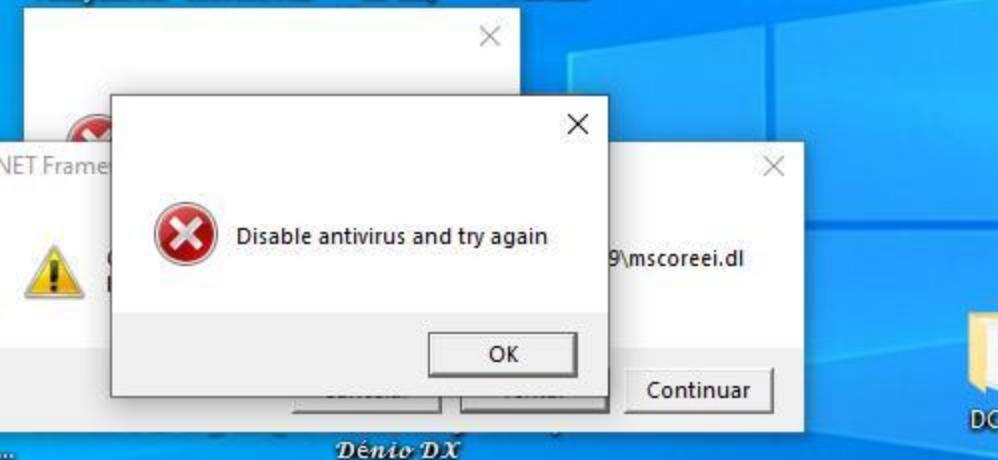
It is possible that the computer's security systems may FALSELY trigger

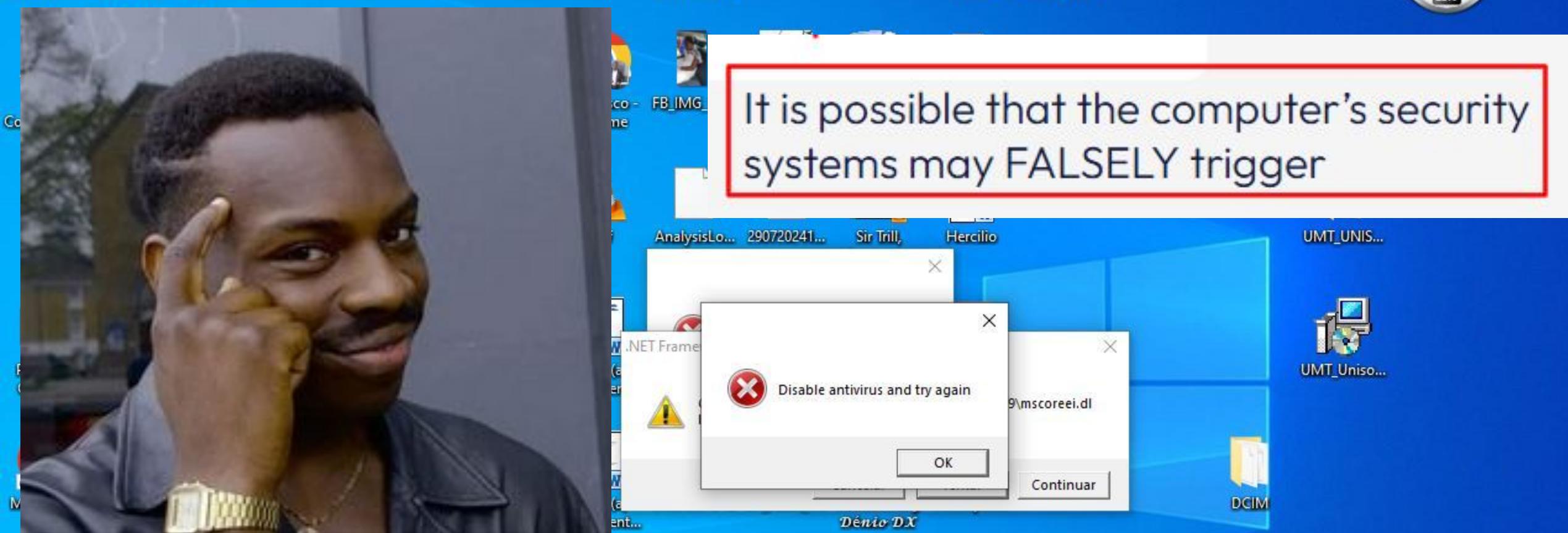
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Why MidJourney?







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Google how to disable bitdefender antivirus 2023

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YouTube - Nam Anh Cap · 25 jan. 2022
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https://www.youtube.com/watch
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Bitdefender 2023 عن العمل مزكوا | Bitdefender 2023 ايقاف برنامج Bitdefender 2023 ...
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YouTube - MR BNA · För 1 månad sedan
3:25

https://clean-my-pc.com/how-to... Översätt den här sidan
How to Disable Bitdefender Windows 10 - Clean my PC
Open the **Bitdefender Total Security** 2019 on your device. · Navigate to the Protection Features tab and click on the Settings icon under the Antivirus module.

https://www.prajwal.org/how-to... Översätt den här sidan
How to Disable Bitdefender Notifications - Prajwal.org
17 dec. 2022 — Launch the **Bitdefender antivirus** or Total security tool. · Select Settings and click General tab. · Turn off the Special Offers and Recommended ...

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Relaterade sökningar

uninstall bitdefender bitdefender alert page

22:36
2023-01-11

Home

Virus & threat protection

Account protection

Firewall & network protection

App & browser control

Device security

Device performance & health

Family options

Settings

⚙️ Virus & threat protection settings

View and update Virus & threat protection settings for Microsoft Defender Antivirus.

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Change your privacy settings

View and change privacy settings for your Windows 10 device.

[Privacy settings](#)
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This setting is managed by your administrator.

Real-time protection

Locates and stops malware from installing or running on your device. You can turn off this setting for a short time before it turns back on automatically.



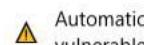
Cloud-delivered protection

Provides increased and faster protection with access to the latest protection data in the cloud. Works best with Automatic sample submission turned on.



Automatic sample submission

Send sample files to Microsoft to help protect you and others from potential threats. We'll prompt you if the file we need is likely to contain personal information.



Automatic sample submission is off. Your device may be vulnerable.

[Dismiss](#)



[Submit a sample manually](#)

Tamper Protection

Prevents others from tampering with important security features.



Tamper protection is off. Your device may be vulnerable.

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Account protection

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Device security

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Family options

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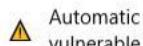
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Tamper Protection

Prevents others from tampering with important security features.



Dismiss



← → C google.com/search?q=ai.midj0urney.or+fake%3F&oq=ai.midj0urney.or+fake%3F&aqs=chrome..69i57.10221j0j7&sourceid=chrome&ie=UTF-8

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virus fake

Is Midjourney

What is the most realistic AI art generator?

Is Midjourney a real AI?

Why is Midjourney no longer free?

Feedback

ai.midj0urney or virus

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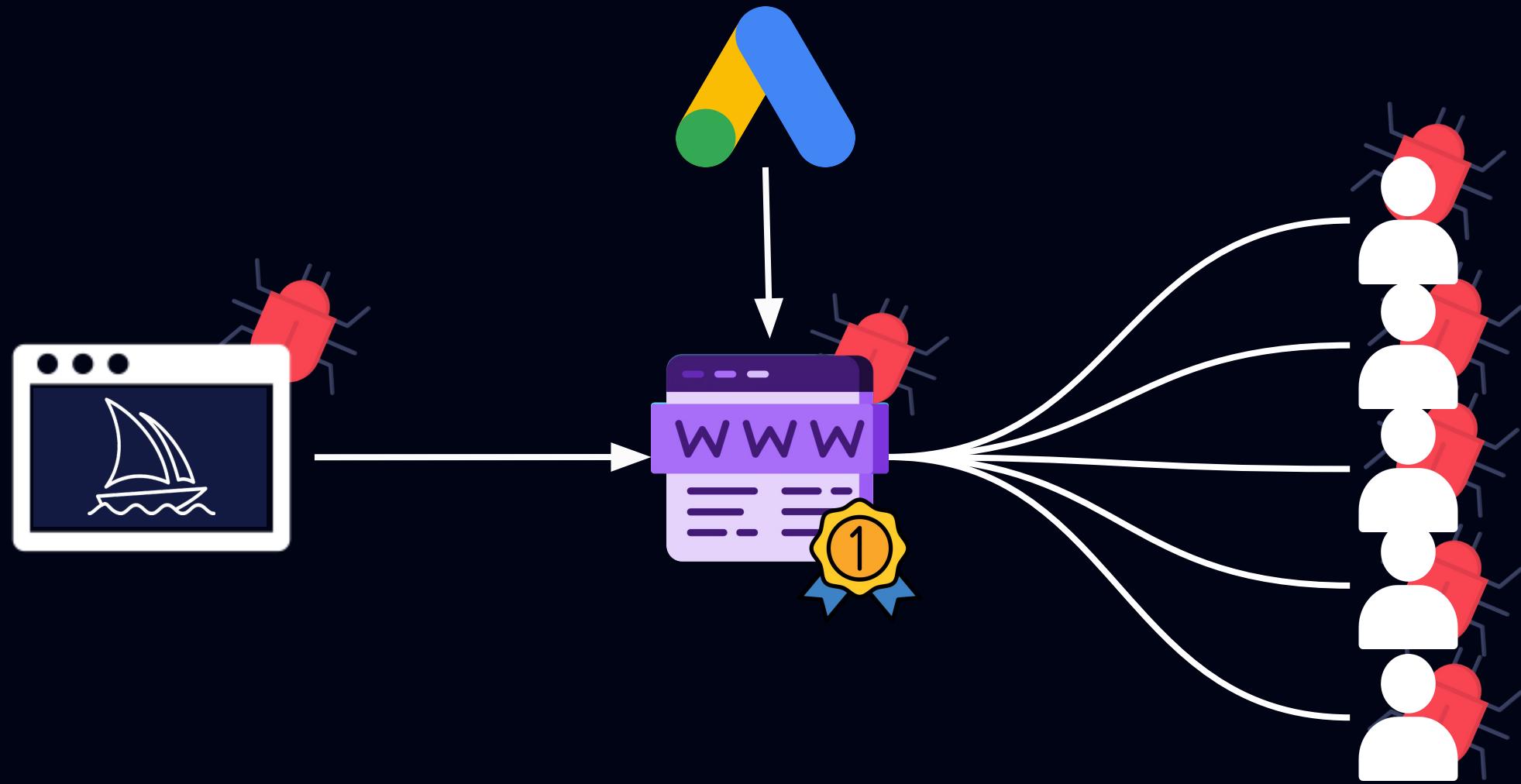
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MidJourney Campaign





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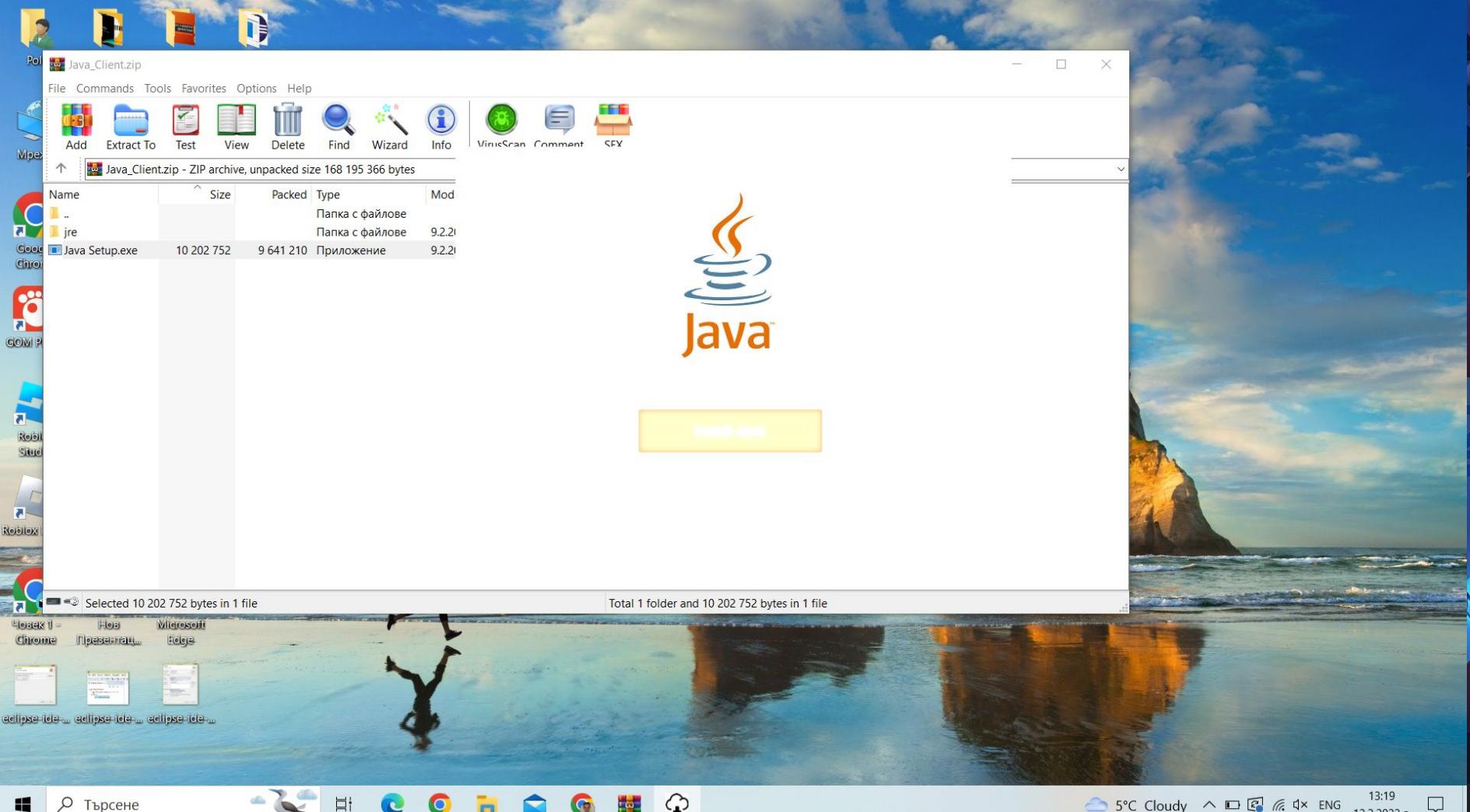
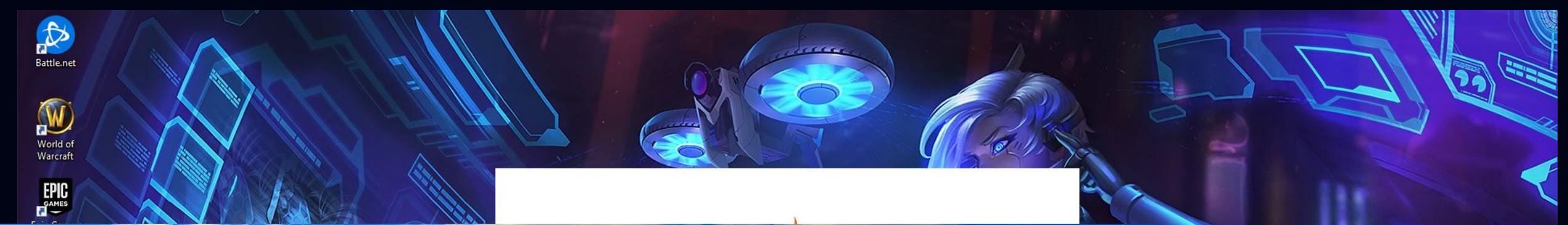


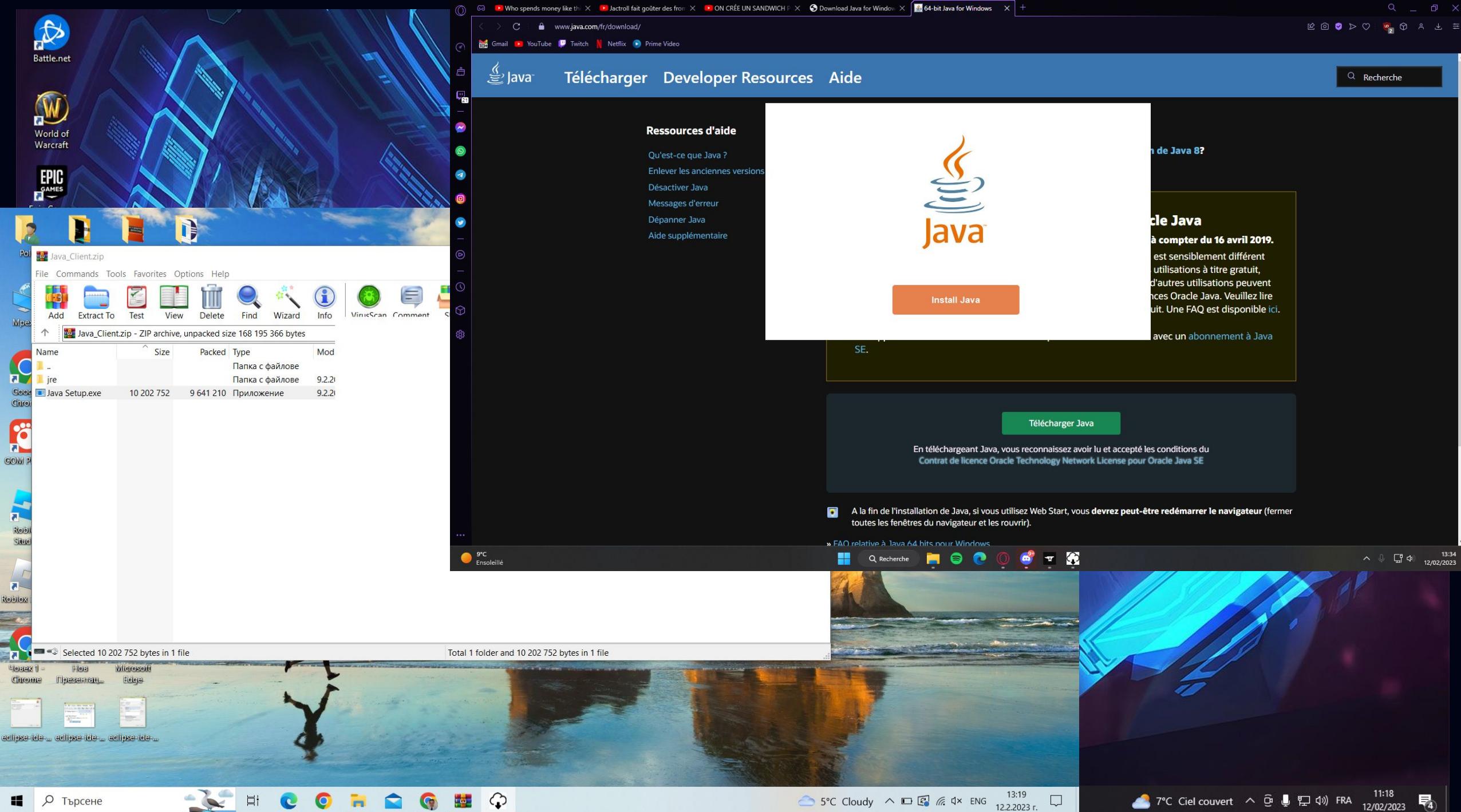
7°C Ciel couvert

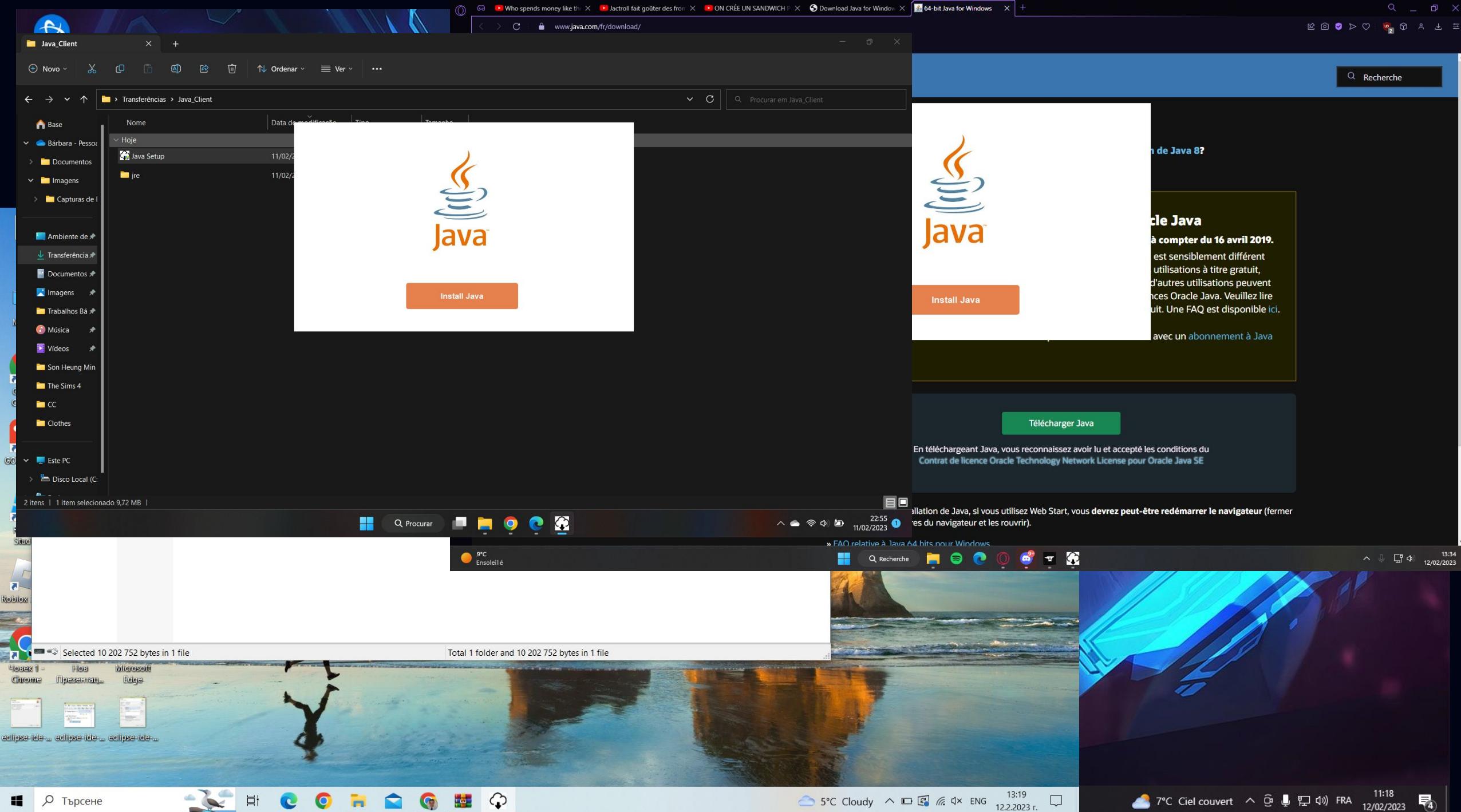


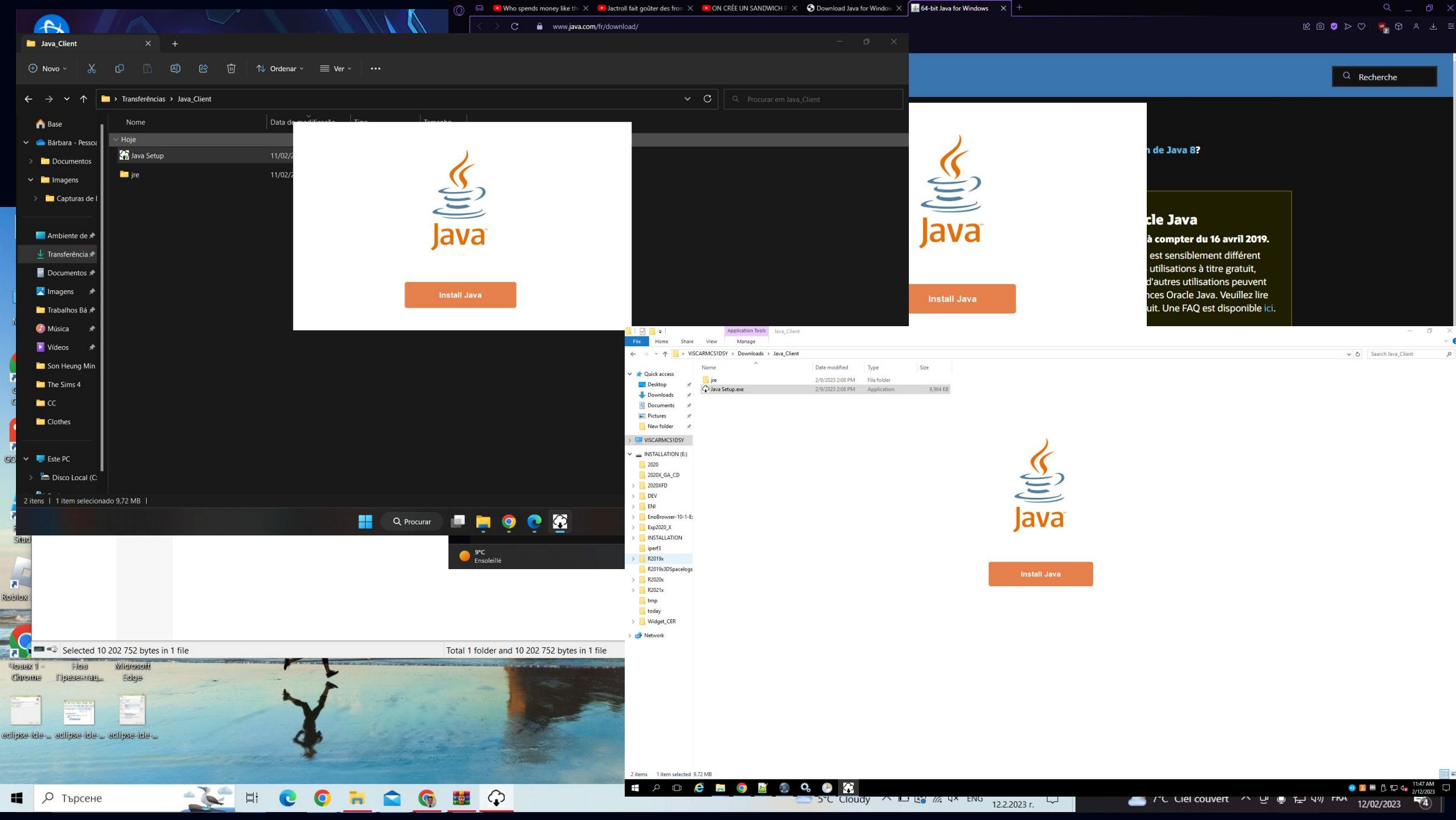
11:18
12/02/2023

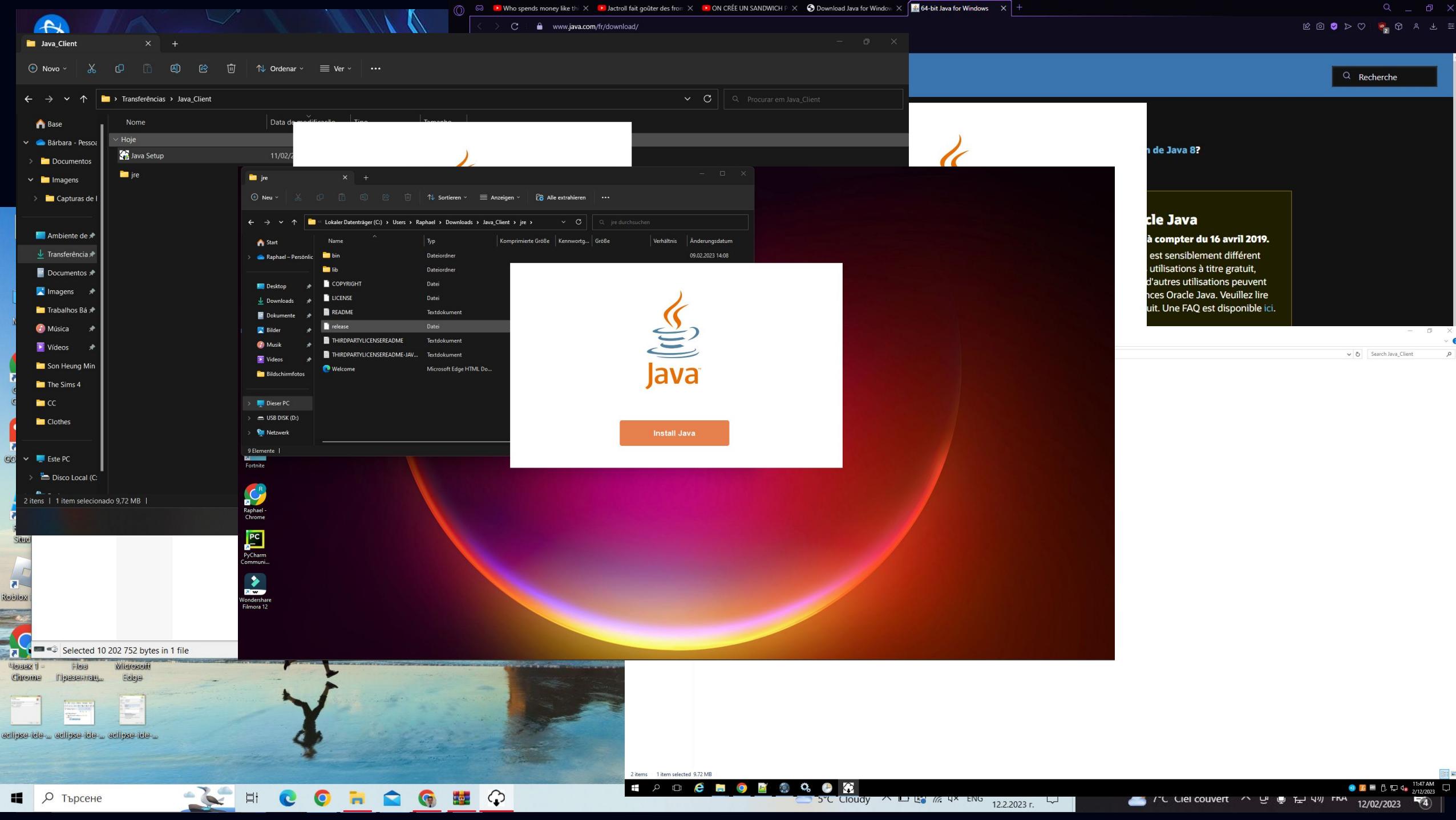














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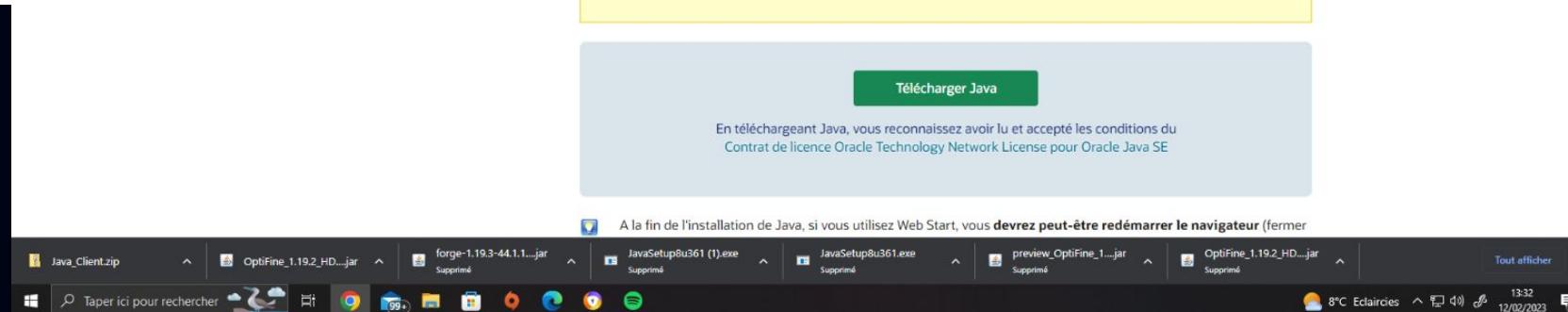
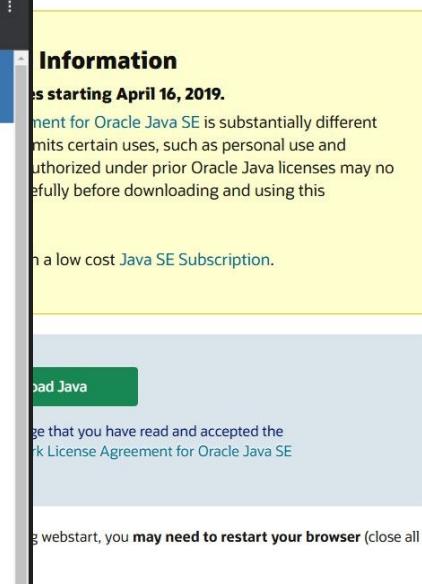
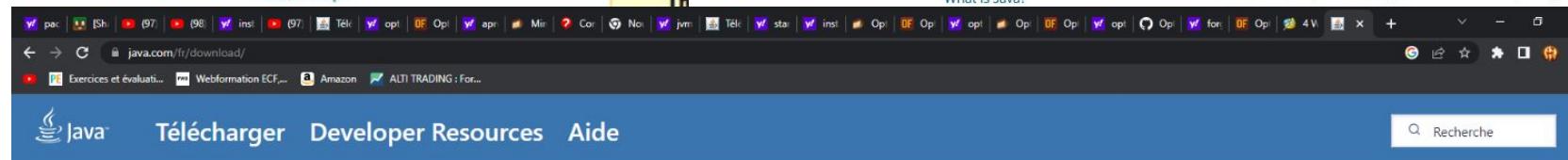
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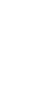
Java is a set of computer software and specifications developed by James Gosling at Sun Microsystems, which was later acquired by the Oracle Corporation, that provides a system for developing application software and deploying it in a cross-platform computing environment. [Wikipedia](#)

Initial release date: January 23, 1996

Programming languages: Java, C, C++, Assembly language

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Google search results for "java" in English and Korean.

English Search Results (Left):

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- App - Java Download**
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- 함께 검색한 항목**
 - java 최신버전 java란
 - java 무료버전 java ... parameter
 - Java -cp java -jar 실행
 - 자바 다운로드 자바 코딩
- 광고** - https://go.java-gapp.space/ (highlighted with a red box)
- Switch to Java - Java Download**
- Java** is a reliable and powerful programming language that provides convenient programming.
Java is a platform for creating analytical and consumer with extensive capabilities.
- 광고** - http://www.ikosmo.co.kr/ (highlighted with a red box)
- 한국소프트웨어인재개발원 - java - ikosmo.co.kr**
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 - Description: Install Java on Windows
 - Description: This article applies to: Platform(s): Windows 10, Windows 8 ...
 - Description: How do I install Java

Right Side (Search Results Page):

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 - Description: 광고 - https://go.java-gapp.space/
 - Description: Switch to Java - Java Download
 - Description: Java is a reliable and powerful programming language that provides convenient programming.
 - Description: Java is a platform for creating analytical and consumer with extensive capabilities.
- Result 2: <http://www.ikosmo.co.kr/>
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java 무료버전 java ... parameter
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- 청소년에게 유해한 결과는 제외되었습니다. 만 19세 이상의 사용자는 성인인증을 통해 모든 결과를 볼 수 있습니다.**
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Java 다운로드



Help Resources

[What is Java?](#)
[Remove older versions](#)
[Disable Java](#)
[Error messages](#)
[Troubleshoot Java](#)
[Other help](#)

Windows 64-bit Users

Do you use both 32-bit and 64-bit browsers?
[FAQ about 64-bit Java for Windows](#)

Offline Installation

Trouble downloading? Try the offline installer

Download Java for Windows

Version 8 Update 361 (filesize: 62.11 MB) [Why is Java 8 recommended?](#)

Release date: January 17, 2023

Important Oracle Java License Information

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When your Java installation completes, if you agree, close your browser windows and re-open).



Legit

The screenshot shows the official Oracle Java website. The top navigation bar includes links for Java logo, Download, Developer Resources (which is highlighted with a red box), and Help. A search bar is also present. On the left, there's a sidebar with 'Help Resources' like 'What is Java?' and 'Windows 64-bit Users' (also highlighted with a red box). Below that is 'Offline Installation'. The main content area is titled 'Download Java for Windows' for 'Version 8 Update 36' (file size: 62.11 MB). It includes a note about Java 8 being recommended, release date (January 17, 2023), and license information. A large 'filesize: 62.11 MB' is displayed prominently. A green 'Download Java' button is at the bottom, preceded by a warning message about accepting the Oracle Technology Network License Agreement.

Malicious

This screenshot shows a malicious Java download page. The layout is identical to the legitimate site, with the Java logo, Download, Help links in the top bar, and a search bar. The sidebar on the left has 'Help Resources' and 'Offline Installation' sections. The main content area is for 'Version 8 Update 36' (file size: 40.11 MB). A red exclamation mark highlights the file size, which is significantly smaller than the legitimate version. Another red exclamation mark is placed over the 'Download Java' button. Red arrows point from the sidebar sections ('Windows 64-bit Users' and 'Offline Installation') to red circles containing exclamation marks. The URL in the browser address bar is https://go.java-gapp.com/... with a long, encoded query string.

A screenshot of a search results page from a web browser. The search query is "java jdk download". The results include several links:

- An advertisement for "Java Download" with a link to "https://go.java-app.space/" (highlighted with a red box and a hand cursor icon).
- A link to "Java - Specifically applications" with a link to "https://oracle.58226.click/".
- A link to "https://www.java.com" which points to "Java | Oracle".
- A link to "Download Java for Windows".
- A link to "Manual download".
- A link to "Install Java on Windows".
- A link to "How do I install .java".

The right side of the screen shows a summary of "Java" as computer software, including its history, developer information, and related searches for Minecraft, Unix, WinRAR, and Minecraft servers.

https://go.java-gapp.space/?gclid=CjwKCAiAuaKfBhBtEiwAht6H78nWQlwzoBYF8W9ge89q0uXqHBa0ZCGhCxL9aGlyJJPtibxqqLWichoCSL8QAvD_BwE#



Java Download Help

Search

Help Resources

- What is Java?
- Remove older versions
- Disable Java
- Error messages
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- Other help

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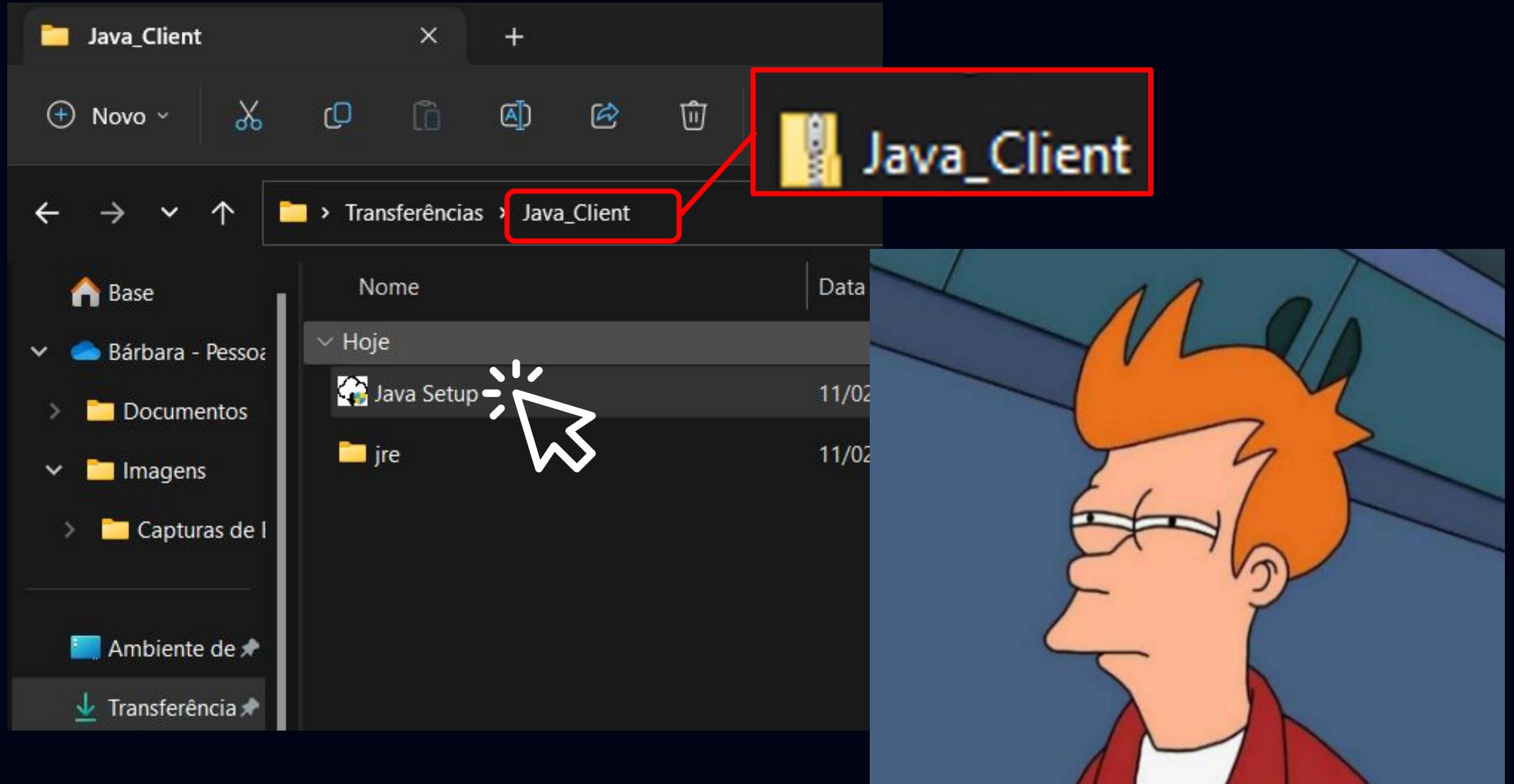
Commercial license and support is available with a low cost Java SE Subscription.

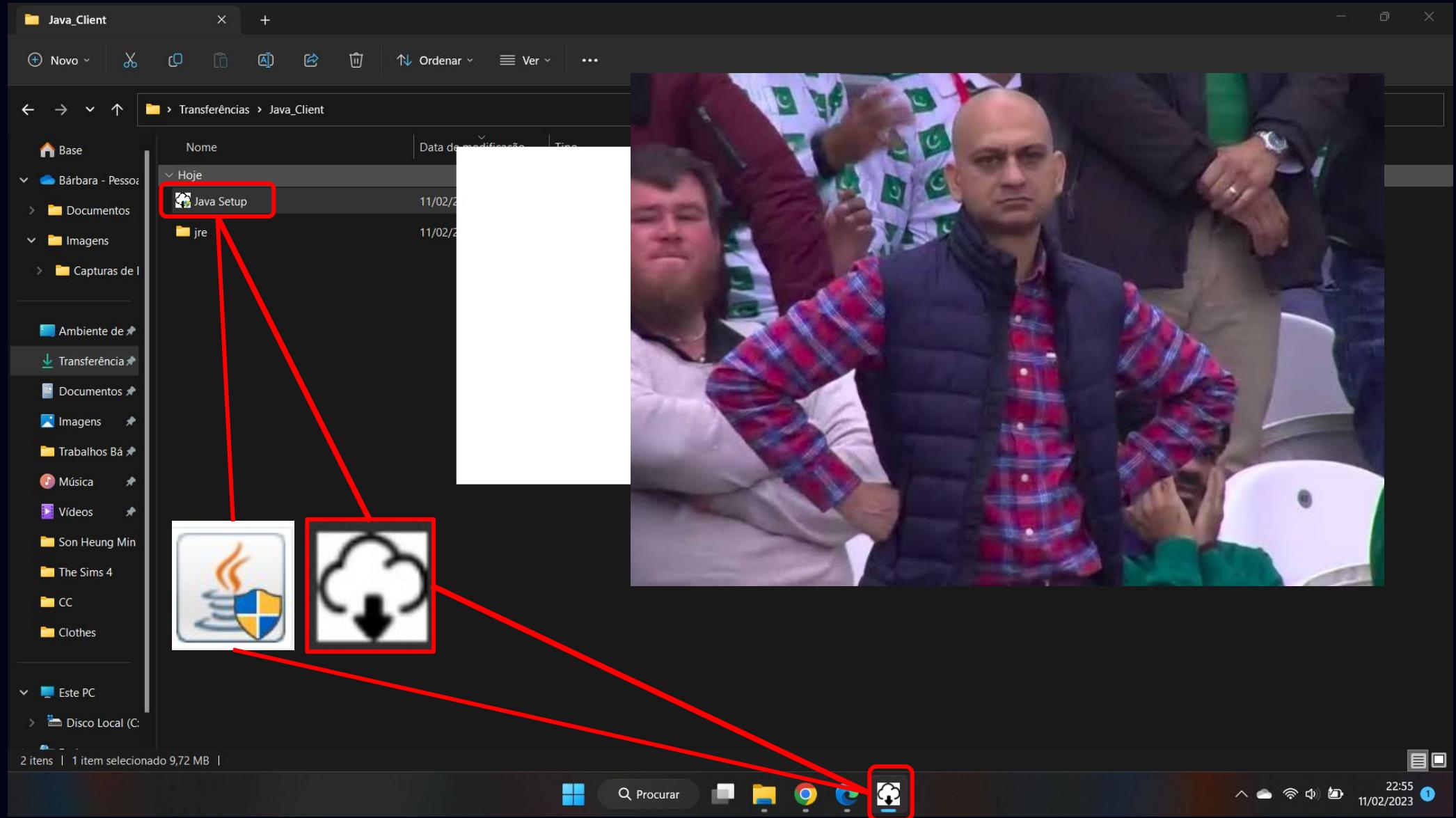


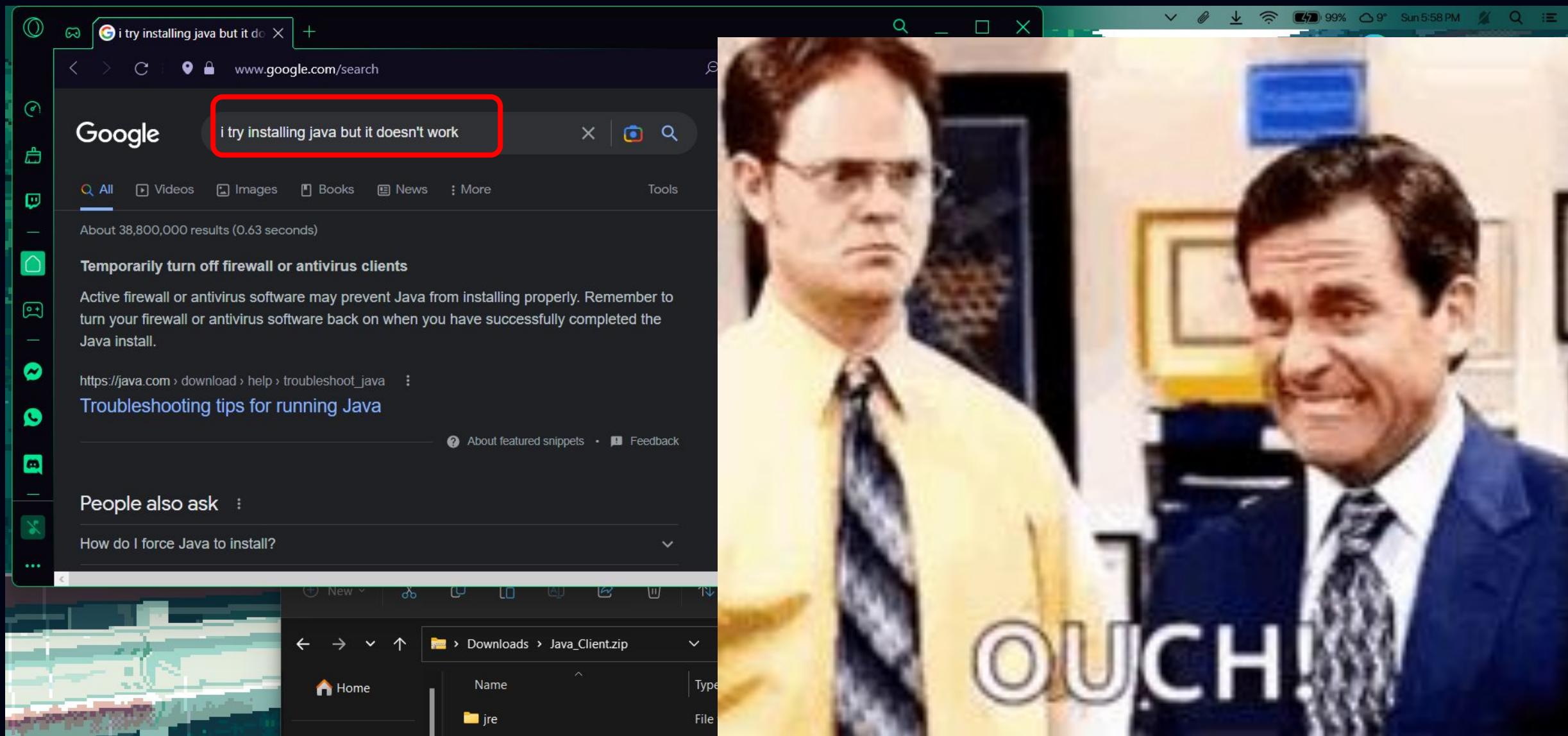
Download Java

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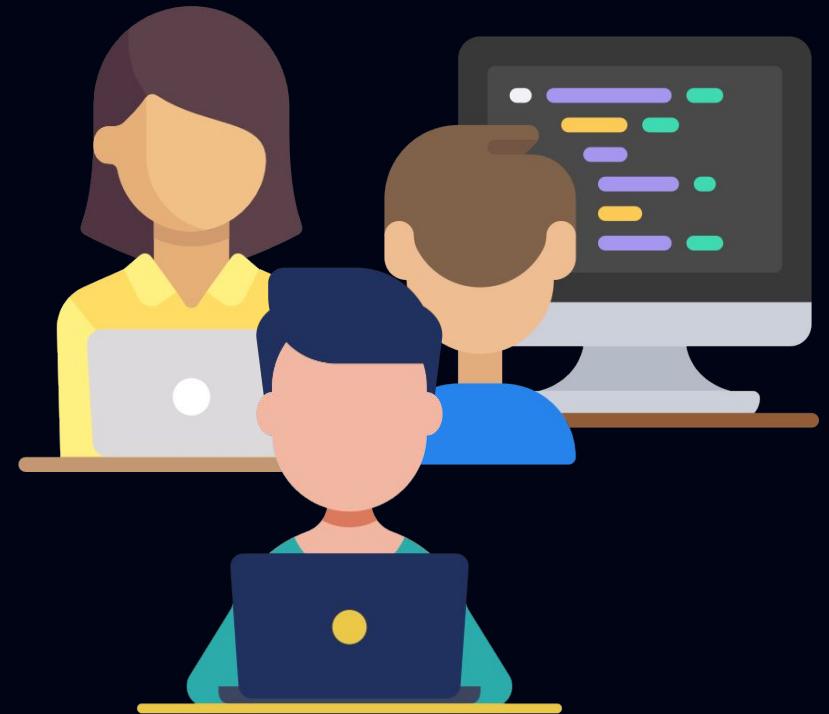




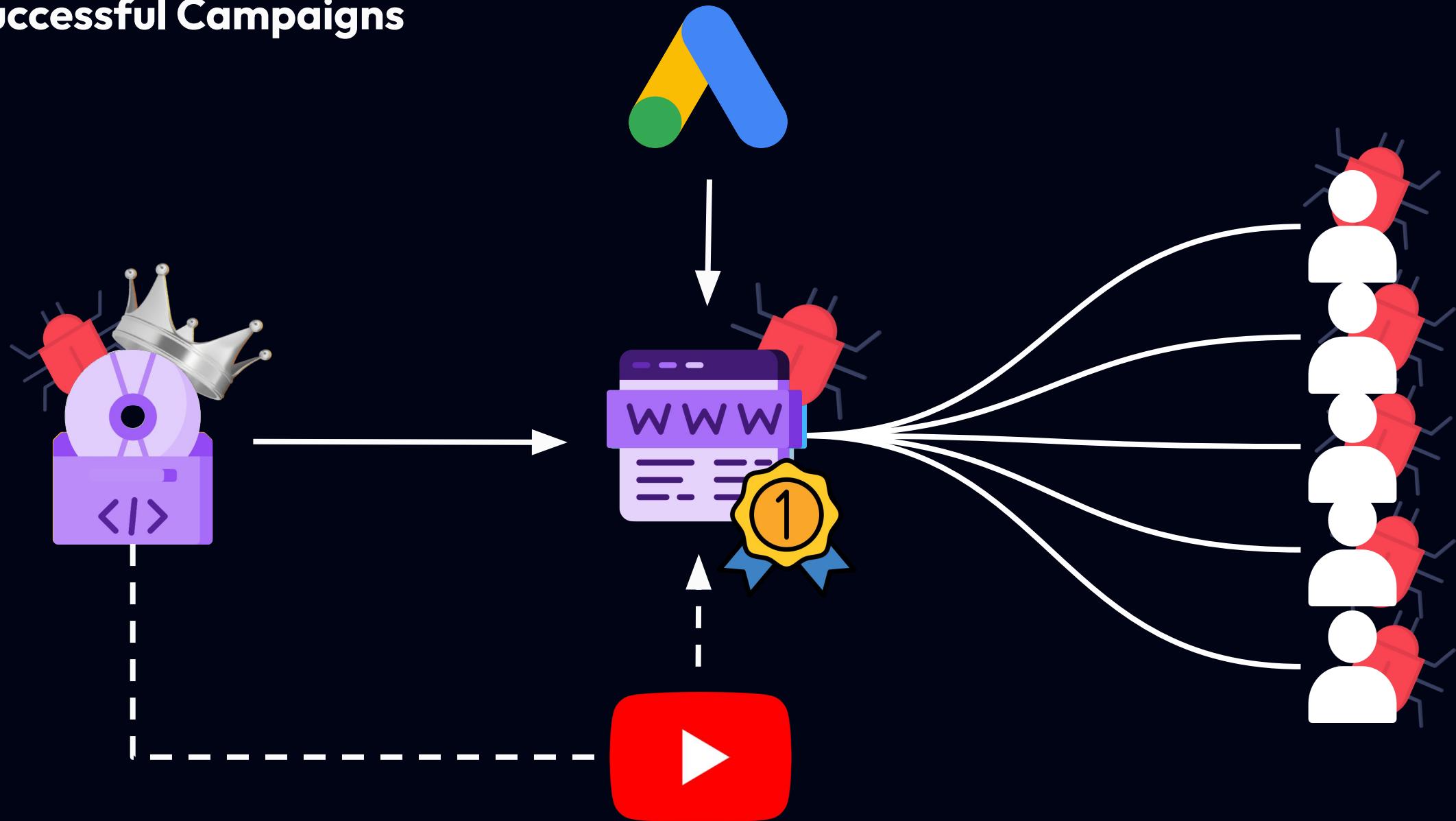


 19h

Blitz Java Campaign



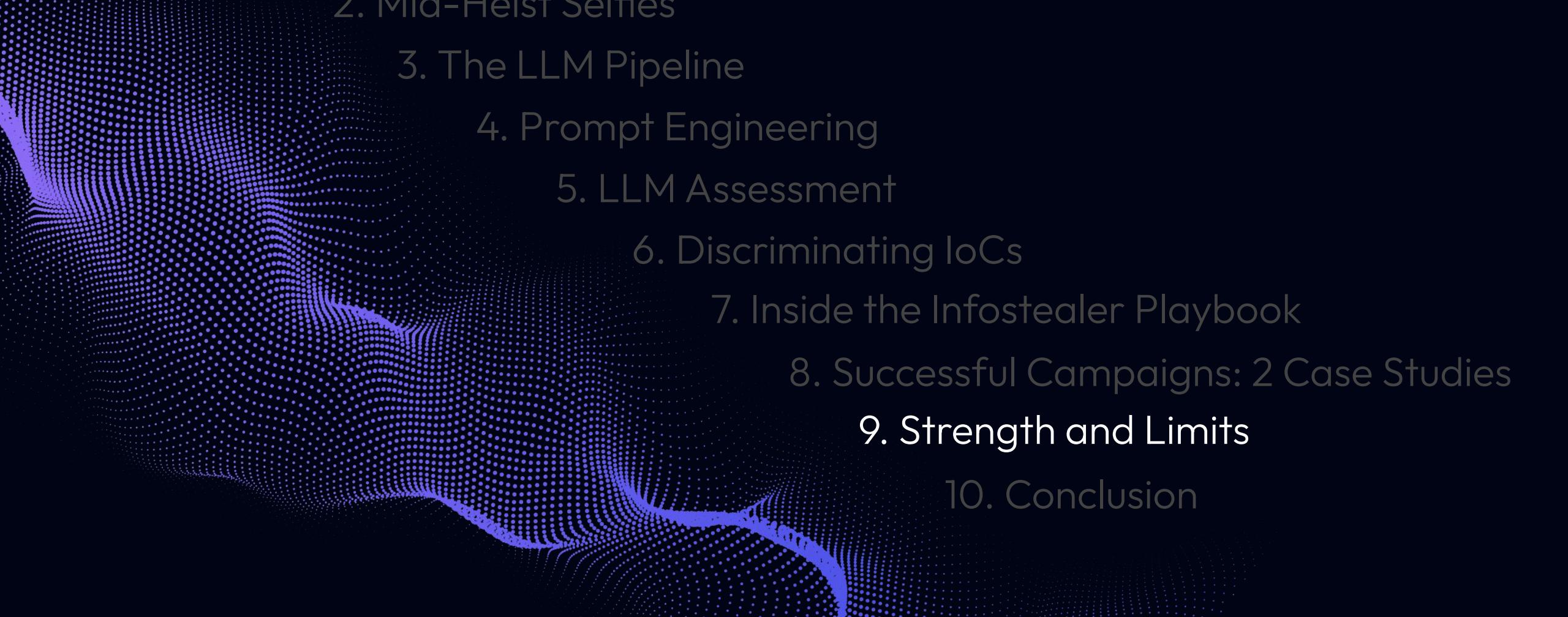
Successful Campaigns



Successful Campaigns

Threat actors **rely** on simple psychological tactics—because they **still work**.

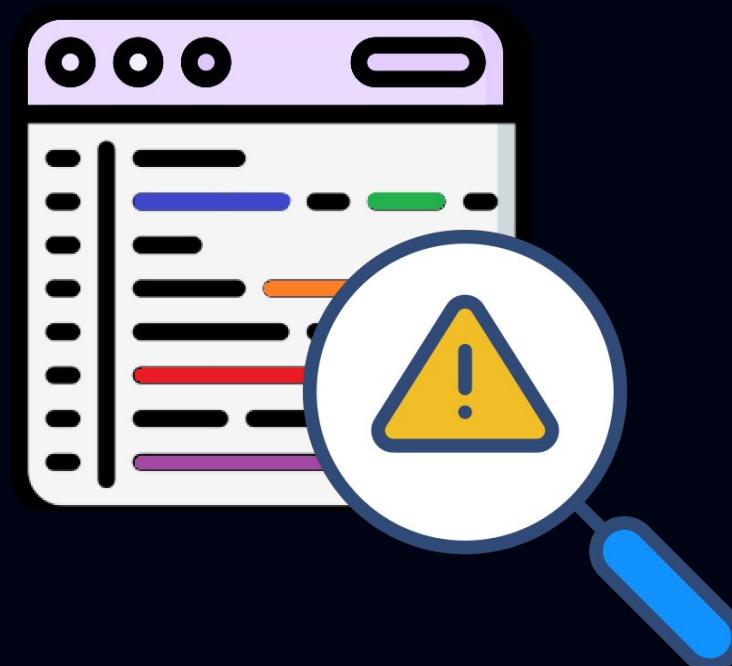
Agenda

- 
- A large, abstract graphic on the left side of the slide consists of a grid of small, glowing blue dots. These dots are arranged in a way that creates a sense of depth and motion, resembling a digital wave or a network of data points. It serves as a decorative background for the agenda list.
1. The Information Stealer Malware Phenomenon
 2. Mid-Heist Selfies
 3. The LLM Pipeline
 4. Prompt Engineering
 5. LLM Assessment
 6. Discriminating IoCs
 7. Inside the Infostealer Playbook
 8. Successful Campaigns: 2 Case Studies
 9. Strength and Limits
 10. Conclusion

Strength and Limits

The screenshots embody both our greatest strength and our primary limitation

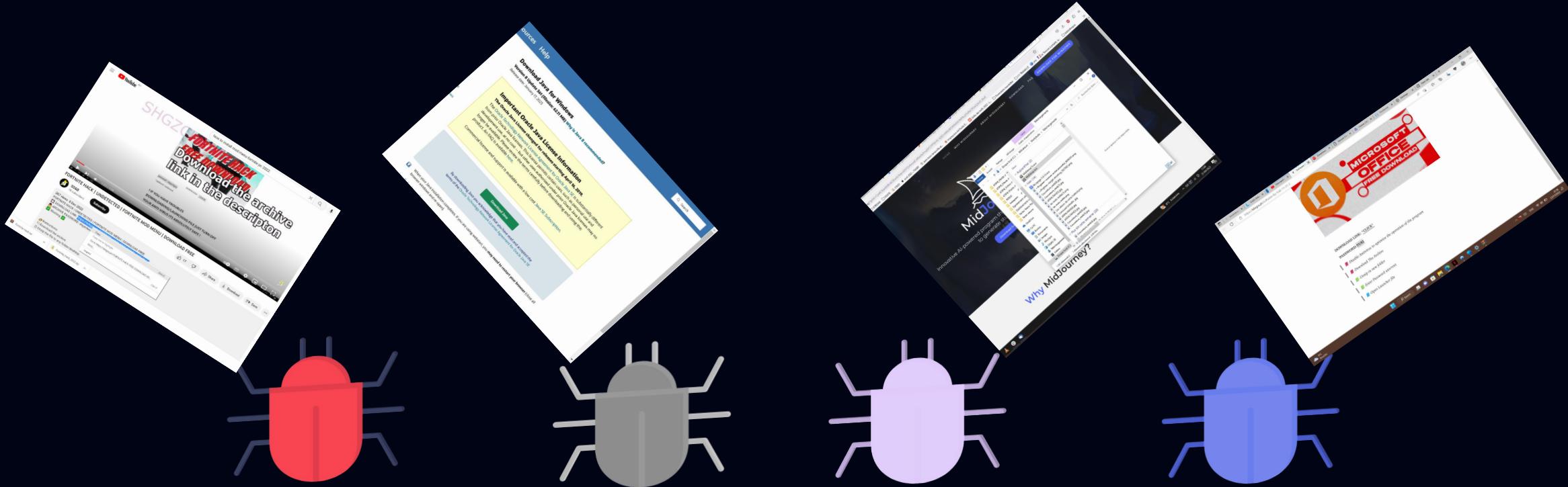
Strength and Limits



Strength and Limits

	LLM	TRADITIONAL MALWARE ANALYSIS
Works w/o Code Signatures	✓	✗
Robust against Code Changes*	✓	✗
Cross Family Family		
Works w/o Screenfetch		

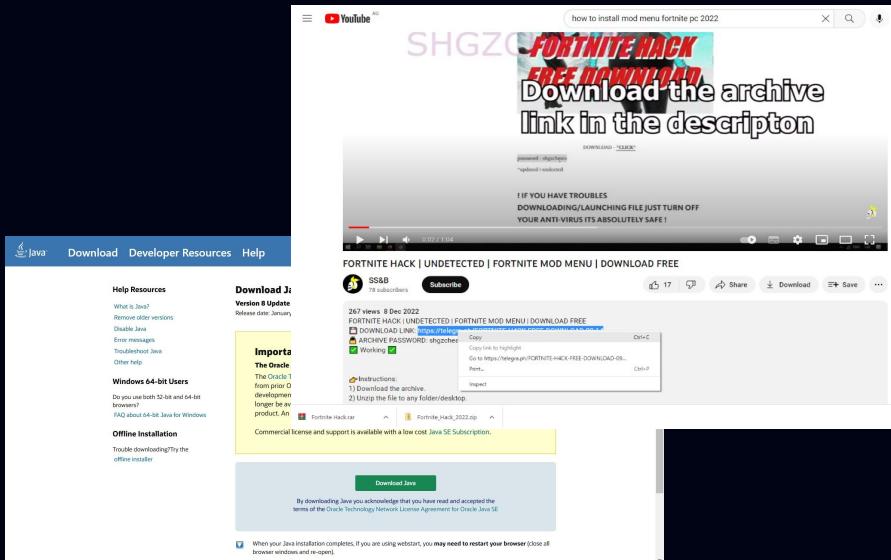
Strength and Limits



Strength and Limits

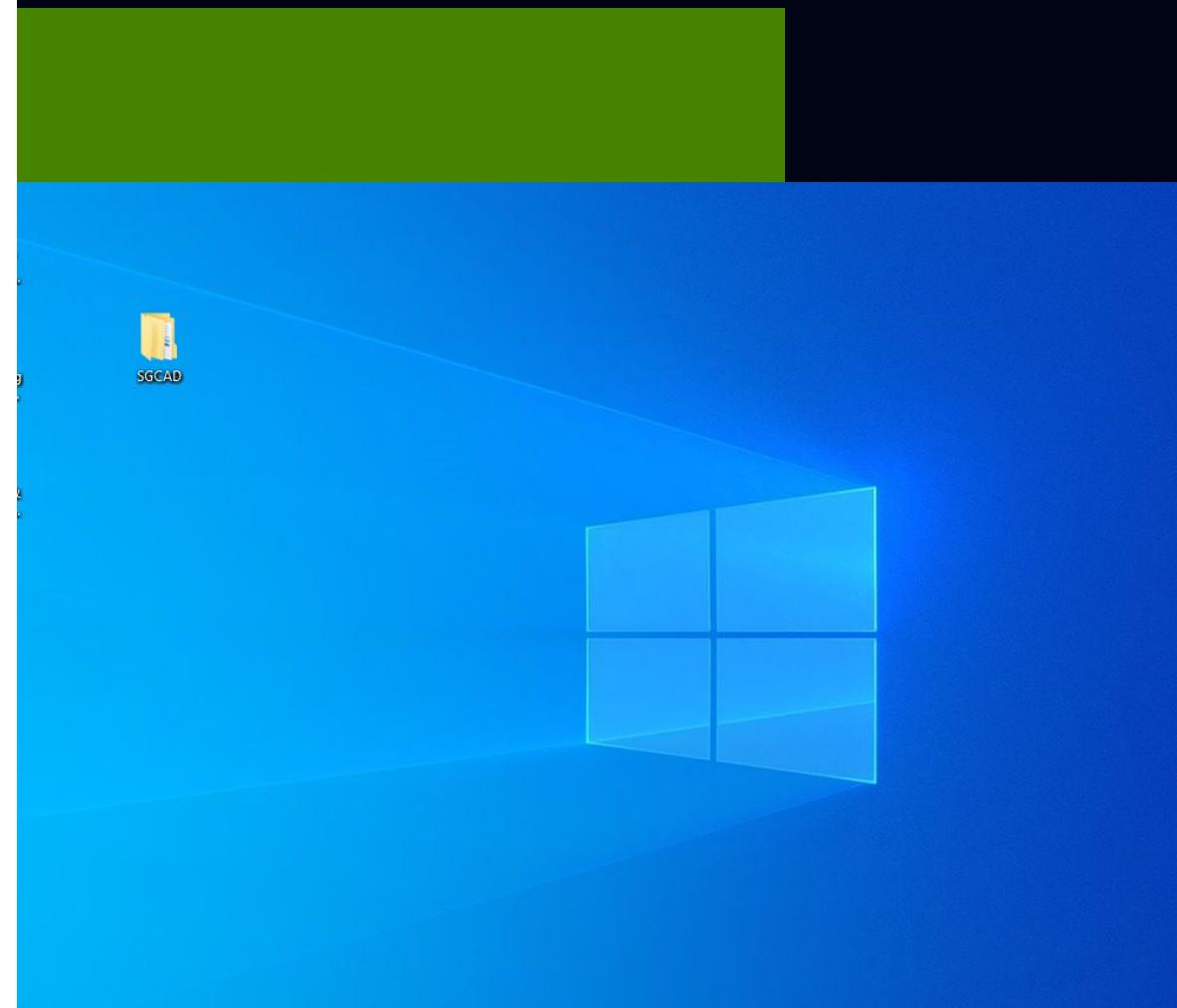
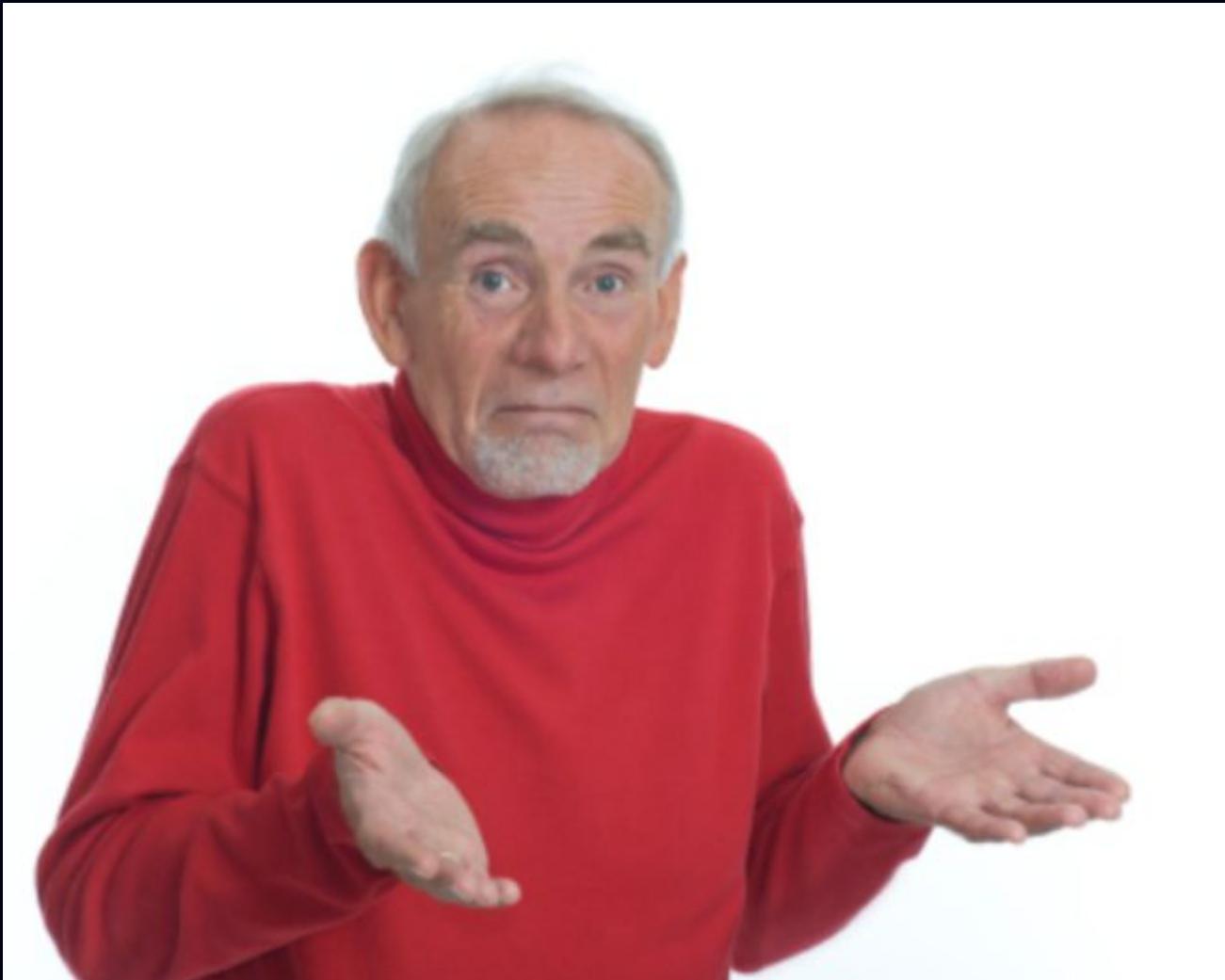
	LLM	TRADITIONAL MALWARE ANALYSIS
Works w/o Code Signatures	✓	✗
Robust against Code Changes*	✓	✗
Cross Family Friendly	✓	✗
Malware Family		

Strength and Limits

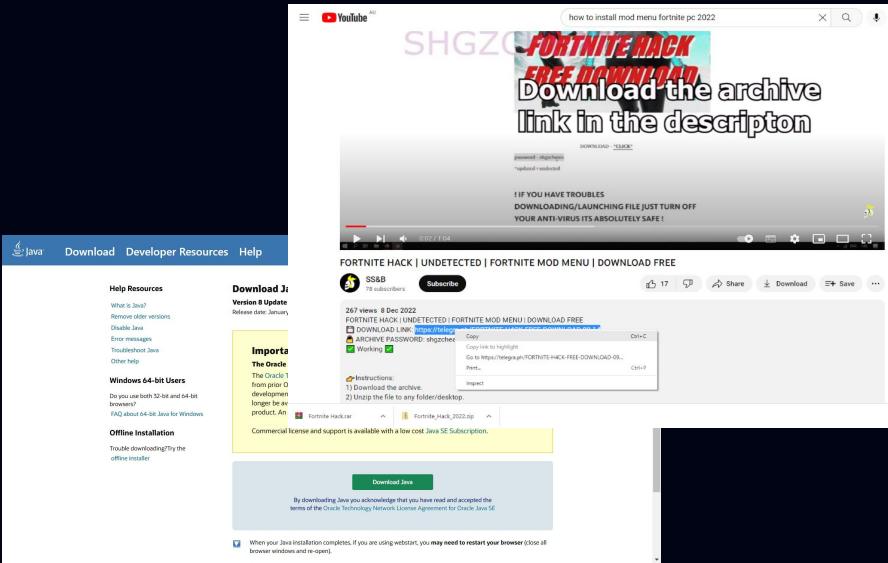


Existence

Strength and Limits



Strength and Limits



Existence

Quality

Strength and Limits

	LLM	TRADITIONAL MALWARE ANALYSIS
Works w/o Code Signatures	✓	✗
Robust against Code Changes*	✓	✗
Cross Family Friendly	✓	✗
Works w/o Screenshot	✗	✓

Cost and Speed

5-10s

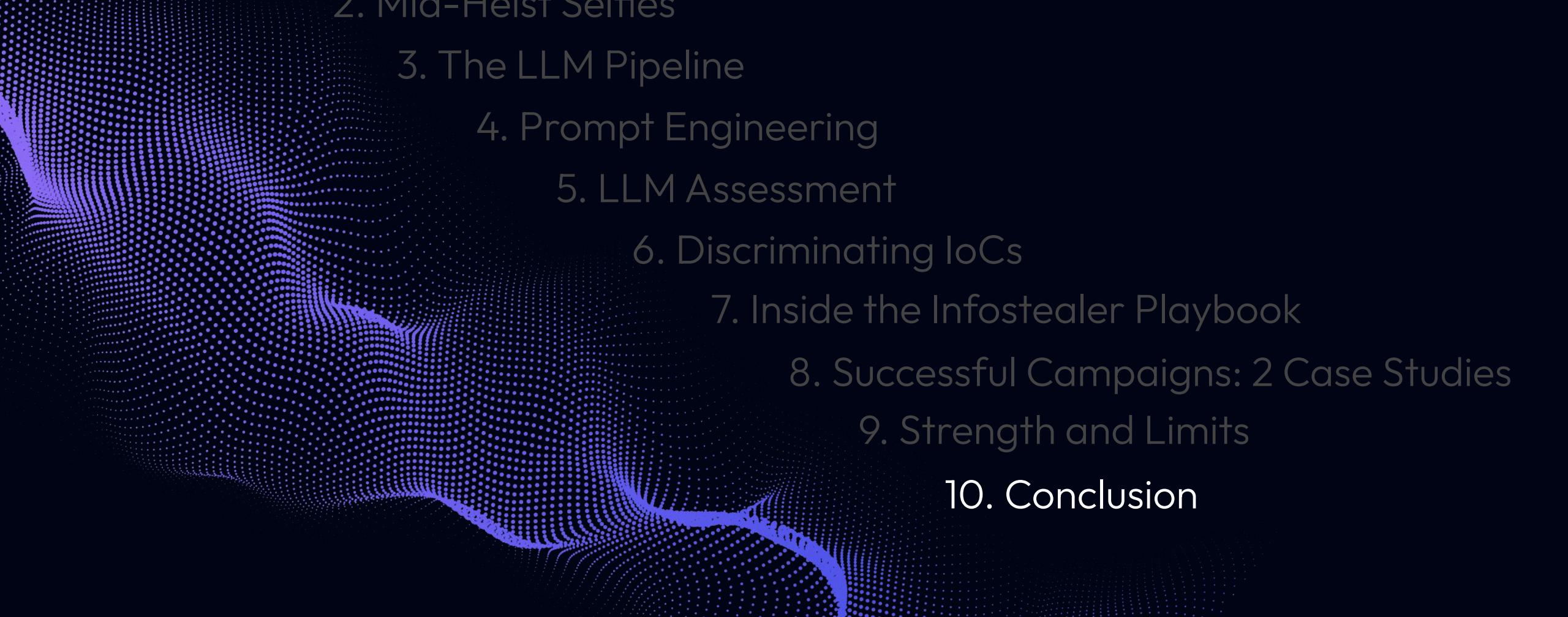
processing

0.003\$

per image

Cost for 100k images: 300\$

Agenda

- 
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Conclusion

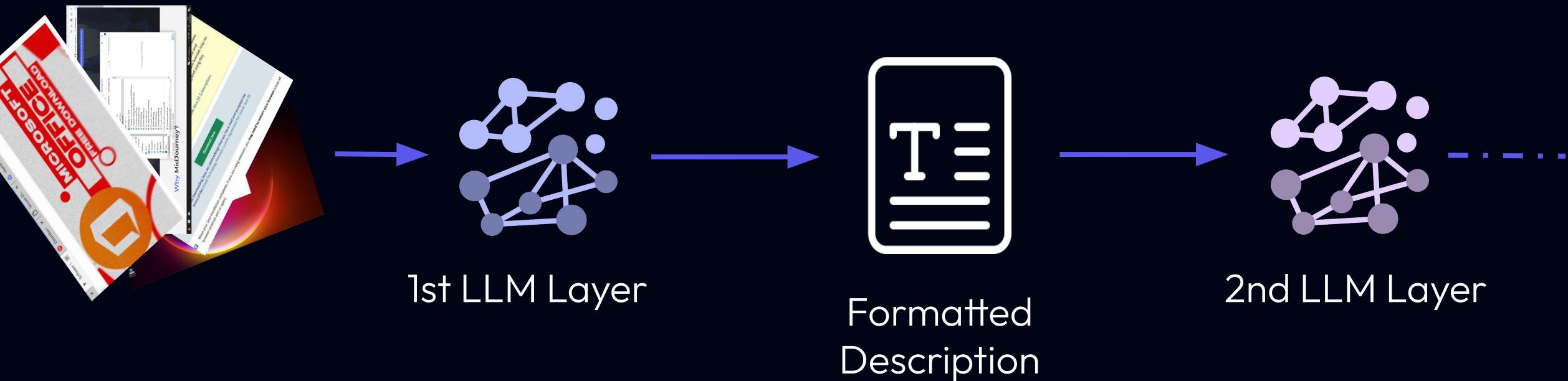
+120M
Stealer Logs



Conclusion



Conclusion



Conclusion

1. Identify loCs at scale
-
2. Track campaigns

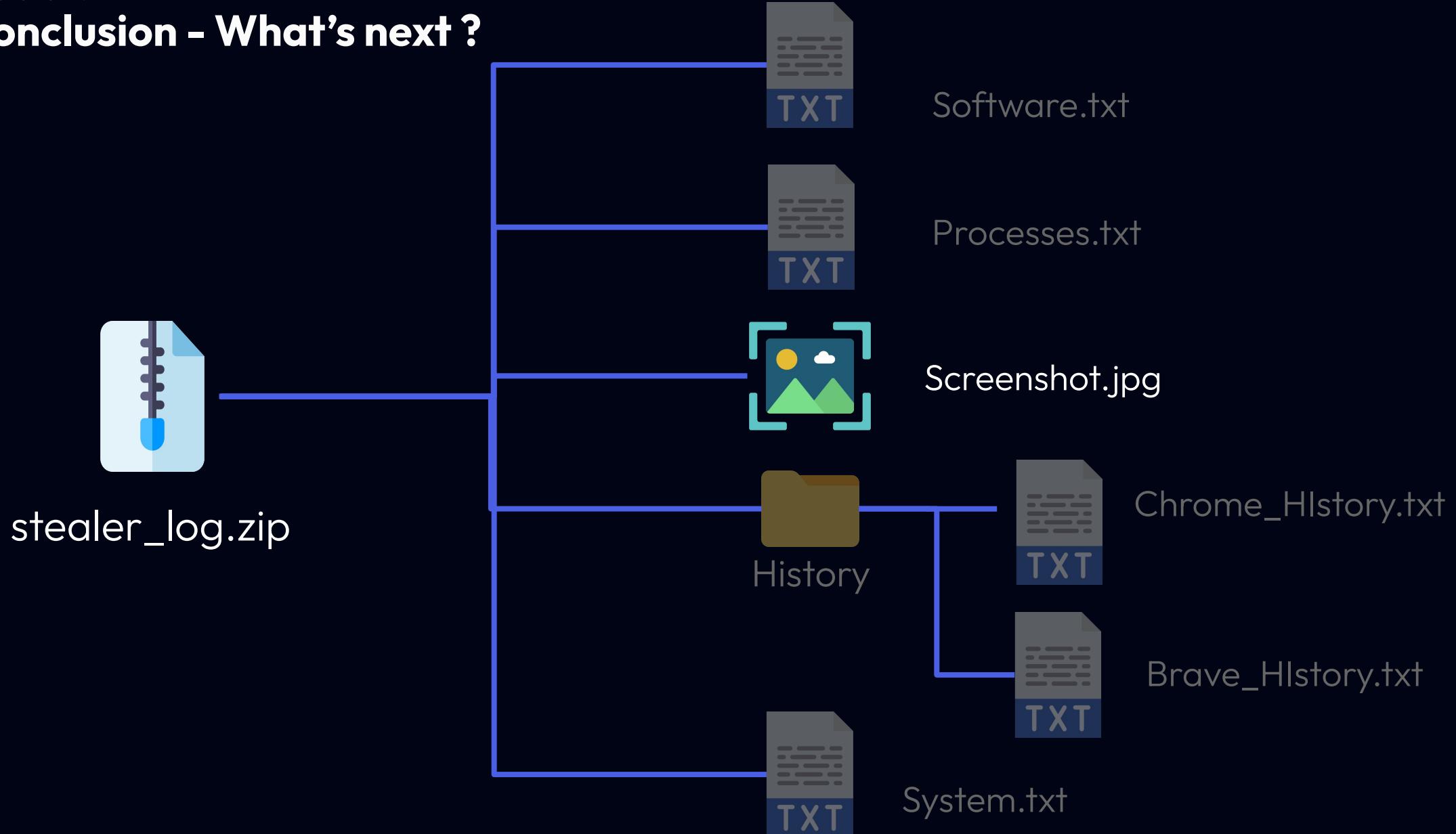
Sound Bytes

(aka Takeaways)

- AWARENESS: Saw evidence rarely seen in public: actual stealer log victim desktop screenshots: a previously hard to analyze story-telling artifact
- They provide valuable intelligence for Indicators of Compromise (IoCs), tracking malware activity and understanding broader campaign patterns
- To use LLMs to analyze cybersecurity artifacts **translate analyst intuition into instructions**

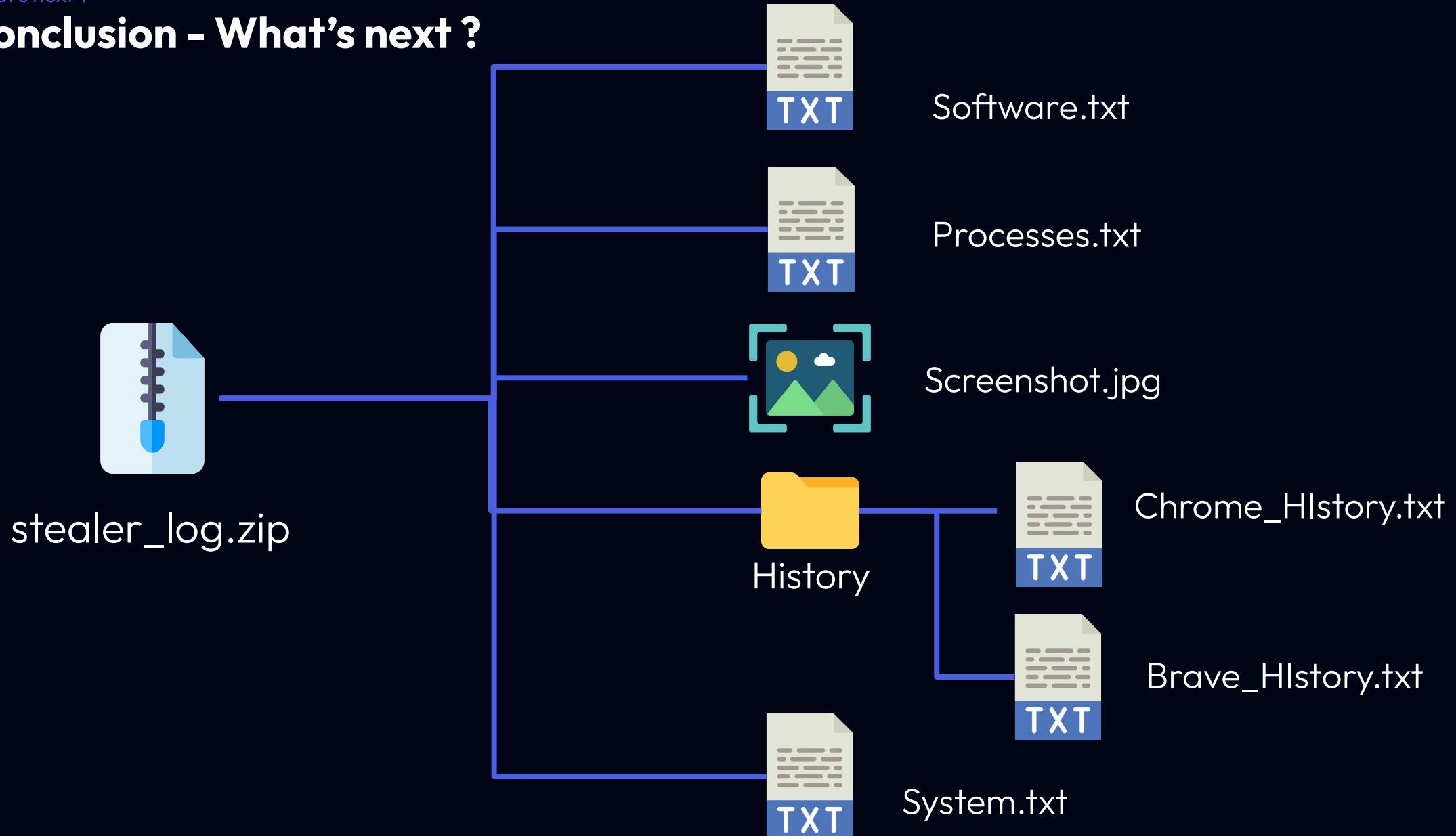
What's next ?

Conclusion - What's next ?



What's next ?

Conclusion - What's next ?



What's next ?

Conclusion - What's next ?



Software.txt



Processes.txt



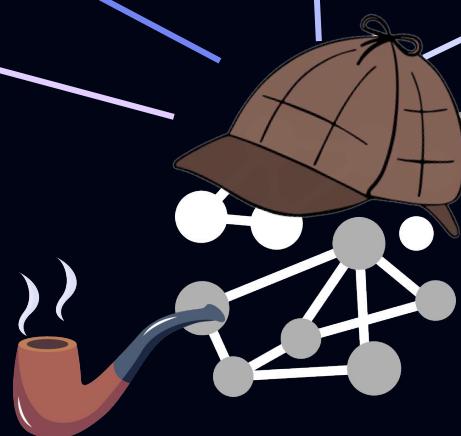
Screenshot.jpg



History



System.txt



LLM-Based Identification of Infostealer Infection Vectors from Screenshots: The Case of Aurora

Estelle Ruellan
Flare Systems
 Montreal, Canada

Eric Clay
Flare Systems
 Montreal, Canada

Abstract—Infostealers exfiltrate credentials, session cookies, and sensitive data from infected systems. With over 29 million stealer logs reported in 2024, manual analysis and mitigation at scale are virtually unfeasible/unpractical. While most research focuses on proactive malware detection, a significant gap remains in leveraging reactive analysis of stealer logs and their associated artifacts. Specifically, infection artifacts such as screenshots, image captured at the point of compromise, are largely overlooked by the current literature. This paper introduces a novel approach leveraging Large Language Models (LLMs), more specifically gpt-4o-mini, to analyze infection screenshots to extract potential Indicators of Compromise (IoCs), map infection vectors, and track campaigns. Focusing on the Aurora infostealer, we demonstrate how LLMs can process screenshots to identify infection vectors, such as malicious URLs, installer files, and exploited software themes. Our method extracted 337 actionable URLs and 246 relevant files from 1000 screenshots, revealing key malware distribution methods and social engineering tactics. By correlating extracted filenames, URLs, and infection themes, we identified three distinct malware campaigns, demonstrating the potential of LLM-driven analysis for uncovering infection workflows and enhancing threat intelligence. By shifting malware analysis from traditional log-based detection methods to a reactive, artifact-driven approach that leverages infection screenshots, this research presents a scalable method for identifying infection vectors and enabling early intervention.

Index Terms—LLM, infostealer, malware

I. INTRODUCTION

Infostealers are a type of malware that infect a victim computer, and steal all of the credentials, session cookies, and personal data out of a browser, in addition to other sensitive information from the host. As such, infostealer malware represents a major threat to corporate and personal identities.

In 2024, Flare reported over 29 million (29,003,537) stealer logs posted on cybercrime forums and channels. The sheer volume of logs, each containing hundreds of credentials and multiple files per entry, renders manual analysis impractical. The overwhelming scale of data makes tracking and mitigating infostealer campaigns exponentially challenging for humans to do.

In recent years, many variants of infostealer malware have evolved beyond their data-exfiltration capabilities. A notable development is the inclusion of a screenshot-capturing functionality, which enables threat actors to take a snapshot of the victim's device. These screenshots are typically captured at or shortly after the point of infection, with the precise timing depending on the offset selected by the attacker.

Flare's dataset has amassed over 60 million stealer logs to date, capturing infections across millions of devices (see Table I). In particular, more than a quarter of these logs, approximately 16.5 million entries, include a "Screenshot" file. In other terms, over 25% of stealer logs contain a visual record of the crime scene at the moment of infection, providing comprehensive clues and evidence critical to understanding the infection. These screenshots have the potential to deliver immediate insights that can reveal context and subtleties often missed or overlooked in textual logs.

What may seem like a trivial feature from the perspective of the attacker—an intrusive snapshot of the victim's screen—has proven to be an unexpected gold mine for the cyber threat intelligence community. Initially, these screenshots may have served a simple purpose for threat actors: to gauge the effectiveness of their infection tactics and determine which traps were most successful. However, as malware campaigns have become increasingly numerous, this seemingly small addition has become a powerful tool for understanding and tracking infostealer campaigns. These screenshots offer unfiltered insights into the victim's environment at the moment of infection. They can reveal critical information such as the webpage visited by the victim when the infection occurred or even the installer of a software, providing invaluable context leading to the infection.

These untapped "crime scene" images represent a valuable resource for further analysis and investigation. They offer a unique visual metric that helps analysts identify and understand the infection vectors responsible for compromising millions of devices worldwide. Far from being a mere byproduct of the attack, these screenshots now represent a key source of intelligence for mapping, analyzing, and better mitigate infostealer campaigns.

II. PREVIOUS WORK

The continuous evolution of malware analysis has given rise to diverse detection methodologies over the past decades. Malware detection approaches can be broadly categorized into static signature-based and behavior-based methods (dynamic or memory analysis) [3], [4], [6], [7].

Signature-based detection remains a fundamental approach, where binary patterns extracted from malicious files serve as identifiable fingerprints. While efficient for known threats, this traditional method relies on matching suspicious files



Questions?



Estelle Ruellan

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- **Social:** linkedin.com/in/estelle-ruellan

First to ask a question will
get a NorthSec 2025
hardware badge!



Olivier Bilodeau

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- **Other Hat:** <https://nsec.io>
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