

# **Configuration Manual**

MSc Research Project MSc in Cybersecurity

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#### **MSc Project Submission Sheet**

#### **School of Computing**

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Programme:	MSc in C	ybersecurity	Year:	2022
Module:	MSc Rese	earch Project		
Lecturer:	Dr. Vane	ssa Ayala-Rivera		
Date:	15th Dec	2022		
Project Title:	Protectin	g Users Identity Against Browser	Fingerpri	nting
Word Count:	676	Page Count: 8		

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.

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## **Configuration Manual**

# Prem Shankar Shingote x20257040

## **1** Introduction

The developed plugin "Browser Fingerprint Defender" is specially designed for the Google Chrome browser, and it is used to protect the privacy of the user while surfing the internet. Many websites track users with the help of their system configuration [1] So our extension helps avoid this kind of tracking. We have used Microsoft Visual Studio to develop this extension, and you can also download the plugin from https://github.com/PremShingote/Browser-Fingerprint-Defender [2].

## 2 Environmental Setup

The Browser Fingerprint Defender extension tested for work on below configurations. For better experience of extension kindly use similar or higher configuration components.

## 2.1 Operating Systems (x32/x64)

- Windows 11
- Windows 10

## 2.2 Hardware

- CPU: Qualcomm, Snapdragon 850
- **RAM:** 4 GB
- Hard Disk: 100 GB

## 2.3 Browser Details

- Browser Name: Google Chrome
- Minimum Version: 100. 0.4896

## **3** Installation

The following steps have to follow when you have to install "Browser Fingerprint Defender" on Google Chrome browser

- 1. Open Google Chrome browser.
- 2. Input *chrome://extensions/* in URL bar and hit "Enter" button on keyboard.



3. Turn on the Developer mode from top of the page.

← → C () Chrome   chrome://extensions	년 🆈 🗎 🌲 🖬 😽 E
≡ Extensions	Q Developer mode
Load unpacked Pack extension Update	
DuckDuckGo Privacy Essentials 2022.12.12 Simple and seamless privacy protection for your browser.	Google Docs Offline 1.50.1 Edit, create and view your documents, spreadsheets and presentations – all without Internet access.
ID: bkdgficldnnnapblkhphbgpggdiikppg	ID: ghbmnnjooekpmoecnnnilnnbdlolhkhi
Details Remove	Details Remove

4. Then click on Load unpacked button to select the extension from folder.

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≡ Extensions				С	L De	velope	r mode	
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	DuckDuckGo Privacy Essentials 2022.12.12 Simple and seamless privacy protection for your browser.	3	Google Docs Offline 1.50.1 Edit, create and view your docur spreadsheets and presentations Internet access.	nents, = - all v	vithout			
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5. Then select the specific folder to select the extension file.

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■ Extensions					Q Developer mode
Load unpacked P	ack extension Update				
😍 Select the extension direc	tory.			×	
$\leftrightarrow \rightarrow \checkmark \uparrow$	↓> ≪ Thesis → Browser Fingerprint Def →	~ C Q S	earch Browser Finge	erprint	ocuments,
Organize 👻 New folder			≣ •	• 🕐	tions – all without
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📁 Thesis	o icons	12/13/2022 4:03 PM	File folder		ilnnbdlolhkhi
늘 Diagram	js	12/14/2022 8:28 PM	File folder		
늘 Improving the p					
Teport					Manager 4.105.0 g password manager,
> 📮 This PC					gives you secure er and mobile device.
Folder:	1				egeplioahd <u>html, 1 more</u>
		Select F	older Ca	ncel	
Details	Remove	Details	Remove		

6. We have successfully added extension into browser.

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≡ Extensions	Q Developer mode
Load unpacked         Pack extension         Update	$\triangleright$
	^
Browser Fingerprint Defender 1.0 Browser Fingerprint Defender protect the users online privacy by defending against fingerprinting websites by providing fake system parameters	DuckDuckGo Privacy Essentials 2022.12.12 Simple and seamless privacy protection for your browser.
ID: dimhmphobjlanngohjlonhmmkjmgomke Inspect views <u>background.html</u>	ID: bkdgficldnnnapblkhphbgpggdiikppg
Details Remove Errors C	Details Remove

7. Open the <u>https://www.deviceinfo.me/</u> [3] to check the current browser fingerprint.

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<b>Device Info</b> A web browser security tes	ting, privacy testing, and troubleshooting tool.		
Accounts Logged In	Detect All Reload Page		
<ul> <li>ActiveX</li> </ul>			
<ul> <li>Ad Blocker</li> </ul>	Device Type / Modely		
<ul> <li>AudioContext / Fingerprinting</li> </ul>	Desiter rype / model:		
<ul> <li>Battery Status</li> </ul>			
Bluetooth	Operating System:		
Browser	Windows 11 (64-bit), or Windows Server 2022 (64-bit)		
Browser Build Number / ID	True Operating System Core:		
Browser Full Screen Mode	Unknown Detection not supported or is blocked by		
Browser MIME Types	browser setting(s)/extension(s).		
Browser Plugins			
Browser Window Size	Browser:		
Canvas / Fingerprinting	Chrome version 108.0.0.0 (64-bit) (Engine: Blink)		
City	True Browser Core:		

8. Now click on the extension to enable it and select any type of device whose fingerprint you want. as we selected a mobile device and Firefox as a browser. The user agent is also generated on the top side of the

extension.

$\leftarrow$ $\rightarrow$ C $\bigcirc$ deviceinfo.me		<b>€</b> 🖻 ☆ 🗎	💽 🖈 🗆 🌍 :
		Active User-Agent	
A web browser security tes	ting, privacy testing, and trou	Mozilla/5.0 (Android 10; Tablet rv:122.0) Gecko/122.0 Firefox/122.0	=;
	,,,,,	Enabled on this domain	
<ul> <li>Accounts Logged In</li> </ul>			
<ul> <li>ActiveX</li> </ul>	l		
<ul> <li>Ad Blocker</li> </ul>	Device Type / Model:	🖵 📀 🗉 🧷 😋 🕻	)
<ul> <li>AudioContext / Fingerprinting</li> </ul>	Tablet	Pause Browser Fingerprint Defende	r
Battery Status		Cotana	
Bluetooth	Operating System:	Get new agent	
Browser	Android version 10	[؋] Open settings	
Browser Build Number / ID	True Operating System Cor	- <b>a</b> • []	
Browser Full Screen Mode			
Browser MIME Types			
Browser Plugins	Browser:		
Browser Window Size	Firefox version 122.0 (Engine	e: Gecko)	
Canvas / Fingerprinting	True Browser Core:		
City			
Connection Status	browser setting(s)/extension(	s).	

- 9. Here are some features of our extension.
  - 1. Open Setting: It give extra options to configure the extension.
  - 2. Get New Agent: Generate the new identity.
  - 3. Device Selection: We can select agent device as per our choice.
  - 4. Start / Pause extension: We can simply enable or disable the extension according to our need.

<b>ଢେ ☆</b> 📮 🧕	
Active User-Agent 4	
Mozilla/5.0 (Android 10; Tablet; rv:122.0) Gecko/122.0 Firefox/122.0	
Enabled on this domain	
II) Pause Browser Fingerprint Defender	
C Get new agent 2	
°¢↓ Open settings	

10. After clicking on "open settings," the general settings page opens, where we can enable some extra features of the extension.

$\leftrightarrow$ $\rightarrow$ <b>C *</b> Browser Fin	ngerprint Defender   chrome-extension://dimhmphobjlanngohjlonhmmkjm 🍳 🖻 🛧 Z 💲 🗍 🤝 🗄
General settings	General settings
Generator settings	Change the behavior of the switcher to best fit your needs:
	Enable Browser Fingerprint Defender
	Automatically change the User-Agent after specified period of time
	Time (in seconds) to automatically update the User-Agent (e.g. 1 hour = 3600):
	Change User-Agent on browser startup
	Protect against detection by JavaScript

11. As we click on "Generator Setting," we can use the user agent from the given list. This option is similar to the selection option we saw in point no. 8.



## References

- [1] "Can You Prevent Browser Fingerprinting?" https://fingerprint.com/blog/browser-fingerprint-prevention/ (accessed Dec. 15, 2022).
- [2] "PremShingote/Browser-Fingerprint-Defender," *GitHub*. https://github.com/PremShingote/Browser-Fingerprint-Defender (accessed Dec. 15, 2022).
- [3] "Device Info Web browser security, privacy, and troubleshooting tool." https://www.deviceinfo.me/ (accessed Dec. 15, 2022).