OSINT

Beware. Your data is out there

OSINT - Open-source intelligence Digital Footprint

- Open-source intelligence (OSINT) is the collection and analysis of data gathered from open sources (overt and publicly available sources) to produce actionable intelligence. (Wikipedia)
- Digital Footprint
- Privacy vs Publicaly available information

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Laws

- Diário República Eletrónico (link)
- ► ANACOM (<u>link</u>)
- CNCS Centro Nacional de Cibersegurança
 - ► Notificação de Incidentes
 - ► CERT.PT (<u>link</u>)
- Unidade Nacional de Combate ao Cibercrime e à Criminalidade Tecnológica (UNC3T) (<u>link</u>)
- Ministério Público (link)



Who Am I

- Pedro António Oliveira Vieira
- ► Google (<u>link</u>)
- ➤ YouTube (<u>link</u>)
- ► LinkedIn (<u>link</u>)
- Certified Ethical Hacker (<u>link</u>)
- ▶ This presentation is not employee related





Search Engines Internet is more than Google

- Search yourself and check the results
- ▶ Google (<u>link</u>)
- ▶ Bing (<u>link</u>)
- Yahoo (link)
- ► Ask (<u>link</u>)
- DuckDuckGo (<u>link</u>)
- ▶ Baidu (China) (link)
- Yandex (Russia) (<u>link</u>)
- ▶ Different search engine → different rules/crawlers → different results



Google Dorks Commonly used searches

- Google Advanced Search (<u>link</u>)
- Google Hacking Database (<u>link</u>)
- ▶ gbhackers (<u>link</u>)
- google-dork-list (<u>link</u>)
- ► Google Guide (<u>link</u>)
- ► Google Guide (<u>link</u>)



Search operators Improve the search

- **filetype**: search your results based on the file extension
- **cache**: This operator allows you to view cached version of the web page.
- **allinurl**: This operator restricts results to pages containing all the query terms specified in the URL.
- **inurl**: This operator restricts the results to pages containing the word specified in the URL
- **allintitle**: This operator restricts results to pages containing all the query terms specified in the title.
- ▶ **link**: This operator searches websites or pages that contain links to the specified website or page.
- **info**: This operator finds information for the specified web page.
- **location**: This operator finds information for a specific location.
- 42 Advanced Operators (link)

Search Dork Examples

- Google Search (<u>link</u>)
- recibo vencimento -brasil filetype:pdf inurl:wp-content
 - recibo keyword to look for
 - vencimento keyword to look for
 - -brasil keyword to ignore
 - filetype:pdf only pdf files
 - ▶ inurl:wp-content only inside wordpress sites
- Available information on receipts
 - Full name, address, nif, nib, marital status, children number, ...

Search Dork Examples

- Google Search (<u>link</u>)
- "hacked by" site:pt
 - "hacked by" keyword to look for
 - site:pt only "portuguese" sites (registered portuguese domains)
- ► About 5350 results
 - ▶ Sites / pages that were "tagged"/"signed"
 - ► Attack and contents changed to show off skills (mainly kids) compared to street tagging

Passwords / Credentials Please don't share

- Kaspersky
 - ► Check your password (<u>link</u>) (**or maybe not**)
 - ► Check last name "vieira" or "Vieira" or "Vieira123"
- ► Top 10 passwords
 - "qwerty", "password", ...
 - ▶ Country specific: BR example "password" → "senha"
- Daniel Miessler SecLists
 - Usernames (<u>link</u>)
 - ► Passwords (<u>link</u>)
 - ▶ Default Credentials (<u>link</u>)



Databreach Is not a thing of the past

- Troy Hunt
 - ▶ HaveIBeenPwned (link)
 - Pwned websites (<u>link</u>)
- Ashley Madison Breach 2015 (<u>link</u>)
 - ▶ When private data gets public
- Piracy Subtitles
 - Don't think you can hide Illegal activities are tracked
- Companies are leaking all your information
 - ➤ Compromised data: Dates of birth, Email addresses, Employers, Family structure, Genders, Income levels, Living costs, Marital statuses, Mothers maiden names, Names, Phone numbers, Physical addresses, Places of birth, Religions, Spouses names

Databreach Company credentials?

- Source
 - ▶ Publicly available list of credentials
 - ▶ More than 10k credentials just for Bosch
- Information gathered
 - ► Rule of email/login
 - ► (FirstName.LastName)@(Country).(company).com
 - Rule of password complexity
 - List of users
 - Phishing campaigns
 - Brute force
 - ▶ Look for those users on Social Media
- Added Problem
 - Credentials reuse

Email/Logir

Passwor

data/m/i/c:mi er@de.bosch.com:\$HEX[576569c3 zkus@de.bosch.com:shannon data/m/i/c:mid data/m/i/c:mic tke@bosch.com:lumpi007 data/m/i/c:mic der@de.bosch.com:a6fc6b19 data/m/i/c:mic z4@de.bosch.com:jaguar data/m/i/c:mid gus.bosch.com:ultra06 data/m/i/c:mid cz.bosch.com:micsis data/m/i/c:mid ll@uk.bosch.com:frances data/m/i/c:mic @bosch.com:petros69 data/m/i/c:mic us.bosch.com:mike5920 data/m/i/c:mid n@us.bosch.com:radar123 data/m/i/c:mic om@us.bosch.com:2af415a2174b1 data/m/i/c:mid om@us.bosch.com:hardrock data/m/i/c:mid rger@za.bosch.com:mike123 data/m/i/c:mid cn.bosch.com:Mikomido data/m/i/c:mid @us.bosch.com:bulldog3120 data/m/i/c:mic @de.bosch.com:maccaroni data/m/i/c:mic mann@de.bosch.com:\$HEX data/m/i/c:mic mann@de.bosch.com:asdfjklö data/m/i/c:mic mann@de.bosch.com:asdfjklr¶ data/m/i/c:mid comcast.net:mojopapa data/m/i/c:mid comcast.net:mojopapa1 data/m/i/c:mic s.bosch.com:bogey data/m/i/c:mic cz.bosch.com:kogugeti data/m/i/c:mic cz.bosch.com:wunazaqu zak@pl.bosch.com:igi74mick77 data/m/i/c:mic data/m/i/c:mic z.bosch.com:hygokibu data/m/i/c:mid @fr.bosch.com:CHOISNE data/m/i/c:mid @be.bosch.com:elsclaes data/m/i/c:mid de.bosch.com:janlasse79 data/m/i/c:mic nl.bosch.com:Killerl data/m/i/c:mic ev@us.bosch.com:leander65 data/m/i/c:mic .bosch.com:ro67vsh5 data/m/i/c:mic nte@it.bosch.com:michele data/m/i/c:mic lli@us.bosch.com:radica4 data/m/i/c:mic de@br.bosch.com:m1s2g3a4 data/m/i/c:mic hi@br.bosch.com:Talita data/m/i/c:mic br.bosch.com:Orquideas1

Databreach Portuguese domain examples (2018)

- uminho.pt Universidade do Minho
- adv.oa.pt Ordem dos Advogados
- pj.pt Policia Judiciária
- mail.exercito.pt Exército
- cm-braga.pt Câmara Municipal de Braga
- cm-guimaraes.pt Câmara Municipal de Guimarães
- psd.pt Partido Social Democrata
- ps.pt Partido Socialista
- fcporto.pt Futebol Clube do Porto
- min.justiça Ministério da Justiça
- Were these the sources for criminal "hacker" Rui Pinto?

OSINT Profiling

- What's my IP? (link)
- ► Ip2Location (<u>link</u>)
- ► Mylocation (<u>link</u>)
- Facebook
 - ► StalkFace (<u>link</u>)
 - Sowdust Github (<u>link</u>)
 - ► IntelligenceX Facebook Search (link)
 - ► Formulas for Searching Facebook (<u>link</u>)



OSINT Profiling

- Mobile (how long have you been using the same number)
 - ► Sync me (<u>link</u>)
- Usernames (you reuse usernames)
 - ► NameChk (<u>link</u>)
 - ► WhatsMyName (link)
 - ► NameCheckup (<u>link</u>)
- Twitter
 - ► Twitter Advanced Search (link)
- ▶ New tools are always being created



OSINT Profiling - Professional

- ► LinkedIn (<u>link</u>)
- Xing (<u>link</u>)
- Company Information
 - ► Technologies described in job adds (leaking information)
- Professional information phishing
 - ► Fake job adds (Is this a thing?)
- Curriculum Vitae
 - ▶ Sending CV with too much information what is too much ☺
 - ► Home address Street View

OSINT (Reverse) Image search

- One image is worth 1000 words, maybe more.
- Google Images (<u>link</u>)
- ► Bing Images (<u>link</u>)
- Yahoo Images (<u>link</u>)
- ► Tineye (<u>link</u>)
- Yandex (<u>link</u>)
- ► The professionals (<u>link</u>)



OSINT Maps

- ► Google Maps (<u>link</u>)
- ► Bing Maps (<u>link</u>)
- ▶ Wikimapia (<u>link</u>)
- ► Tips, Tricks and Techniques (link)



OSINT Street View

- ► Google Street View (<u>link</u>)
 - ► Identify house by address
 - ► Assess security (cameras, fences, ...)
 - ▶ Parked cars (timeline, ...)
 - ▶ People's habits/routines, timetables, ...
- ▶ View the past timeline (link)
- ► Instant Street View (<u>link</u>)



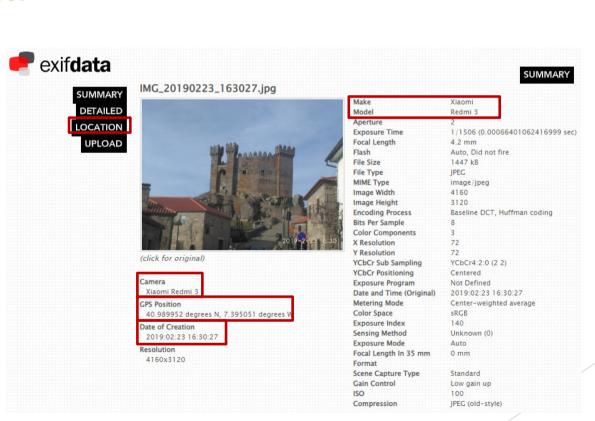
OSINT - Photos Lots of Information

- Where was this image taken?
 - ► Have you been there?
- ▶ When?
 - ▶ Date stamp on photo
 - ▶ Filename with date
 - Metadata
- What else?
- Image search



OSINT - Photos Metadata

- Metadata
- ► GPS (<u>link</u>)



Search Geolocation

- Digital Cameras/Mobile Phones
 - Metadata
 - ▶ Geolocation
 - Camera Model
 - ...
- Breasts lead to arrest of Anonymous hacker (<u>link</u>)
 - ▶ Police allege that an Anonymous hacker posted a picture of his presumed girlfriend's breasts as a taunt to U.S authorities. The picture allegedly contained GPS information that led the FBI to her.

Search Satelite View

- Zoom Earth (<u>link</u>)
- Satelites Pro (<u>link</u>)
- ► World Imagery (<u>link</u>)
 - ► Wayback (<u>link</u>)
 - ► Wayback example (<u>link</u>)
- ▶ View the past timeline



Helping Tools Safety

- VirusTotal
 - ► Check received files (<u>link</u>) (**don't upload Personal or company related information**)
- Netcraft
 - ► Sitereport (<u>link</u>)
- Credit Card Shopping
 - Virtual Card
 - Mbnet
 - ▶ Revolut
 - ► PayPal



Helping Tools Privacy

- Temporary Email
 - ▶ 10 minute email (<u>link</u>)
 - ▶ 20 minute email (link)
- Disposable Email
 - ▶ 60 minute email (link)
- Internet Access (DarkWeb included)
 - ► Tor (<u>link</u>)
 - ► Tails (<u>link</u>)



Helping Tools Reverse Tracking

- Gmail Plus Address
- So what is a Gmail Plus address? Say you have an email address like billgates@gmail.com. If you append a "plus" sign to your email username, Gmail will ignore anything written between the + and @ sign in the email address and still deliver the message to the same mailbox.
- So any email address sent to billgates+microsoft@gmail.com or billgates+blog@gmail.com or billgates+website@gmail.com will still reach the Gmail inbox of billgates@gmail.com inbox though, technically, they are three different email aliases.
- https://www.labnol.org/internet/email/gmail-email-alias-two-separate-gmail-address/2388/

Deadly Social Media The Final Hours of Pop Smoke

- Rapper Pop Smoke Murdered in Home Invasion ... By 4 Masked Gunmen (<u>link</u>)
- Instagram Posts
 - Location Tag
- Geolocation
 - Reverse Image
- Google Maps
 - ▶ Local Recon
- Airbnb/Zillow (Rent/Real-estate)
 - ► House photos (Outside and Inside)
 - Layout
- YouTube Video: The Cyber Mentor (link)



OSINT Personal Information

- Posted information can get publicly and world available
 - ▶ Even private profiles can have their data shared by others
- When information is posted
 - ▶ Shows where you are at that time (habits & routines)
- Information on the picture
 - Metadata
 - ▶ Geolocation
- Awareness.
 - ▶ What do we teach our kids? Do we teach?
 - ▶ They are exposed to everyone on the internet.



Awareness True stories

- Someone posted a photo of healthy meal
 - Laptop in background: Zoomed in and read emails
 - ▶ Social Media uses OCR. They also read the emails
- ▶ I once posted picture on social media while on trip
 - ▶ My friends knew I was not home (Not public profile. At least I think it is not)
 - Friends on that location called me on the phone
- Buying book (Buyer's card information)
 - ▶ How I was able to get money just by having the right information
- Social Media accounts
 - ▶ If you don't have Facebook, I can create one in your name and call your friends

OSINT Portugal - Public contracts

- ► Base (<u>link</u>)
- Example (<u>link</u>)
- PDF of contract with PII strikethrough (link)
 - ▶ Open with pdf reader and delete the strikethrough boxes
 - Name of employee who edited the document
 - ▶ Information on UA, LinkedIn, Facebook, ...
 - ▶ Metadata: "KONICA MINOLTA bizhub C454"
- Information leaked
 - ► Full Names, nif, addresses



OSINT Portugal - Vehicle Information

- Automóvel On-line (<u>link</u>)
- Certidão Permanente Automóvel (<u>link</u>)
 - License Plate: "01-EF-34"
 - Result
 - ▶ Brand: MERCEDES-BENZ
 - ▶ VIN: WDD2040081A043326
 - Example (link)
- ► Vehicle Information (<u>link</u>)
 - Example (link)
 - ▶ Information: Brand, Model, Location, Paint, Delivery Date, Extras, ...
- Hack accross the globe by VIN (link)



OSINT Portugal -Insurance Information

- ASF Autoridade de Supervisão de Seguros e Fundos de Pensões (<u>link</u>)
 - Example (link)
 - License Plate: "01-EF-34"
 - ▶ Date: "03-07-2022"
 - Example 2 (link)
 - ▶ License Plate: "01-EF-34"
 - ▶ Date: "03-07-2012"
- Insurance Company
 - Current and Past
 - ▶ Length of the contract
 - ► Insurance policy number

OSINT Portugal Specific

- Registo Predial Online (<u>link</u>)
- ▶ DGES Direção-Geral de Ensino Superior (link)
- ▶ DRE Diário da República (link)
 - ► Search DRE (link)
- Finnaças Penhorados (link)
 - Example (link)
 - ► Search Penhorados (link)
- Ministério da Justiça Penhorados (link)
- Plataforma Eletrónica de Compras (Administração Pública) (link)
- Leaked information:
 - Full Names, Addresses, NIF, Company, Marital Status, ...



Wayback Machine Internet in the past

- Wayback Machine (<u>link</u>)
- ► Archive.is (<u>link</u>)
- Cached Pages (<u>link</u>)
- Cached View (<u>link</u>)
- ► OldWeb.Today (<u>link</u>)
- ► Time Travel (<u>link</u>)



Shodan Internet of Things

- Search Engine for Internet Of Things
- Explore
 - ► Shodan explore (link)
- Images
 - ► Shodan images (link)
- Maps
 - ► Shodan maps (<u>link</u>)
- Internet Exposure Observatory
 - Exposure Dashboard (<u>link</u>)



Shodan
Internet of Things

- Remote Desktop (<u>link</u>)
 - ► Total results: 3,482,756
 - ► Braga (<u>link</u>)
- Images
 - ► Braga (<u>link</u>)
 - ▶ VNC Remote Access and Loggedin (link)
- Authentication Disabled
 - ► Portugal (<u>link</u>)
 - ► Primavera (<u>link</u>)
- Contabilidade (<u>link</u>)



Shodan Internet of Things

- Fotos
 - ► Portugal (<u>link</u>)
- ► IP Cameras
 - ► Portugal (<u>link</u>) (default credentials?)
 - **▶ Webcams** (<u>link</u>)

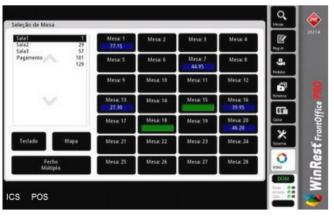


Shodan Internet of Things - Images







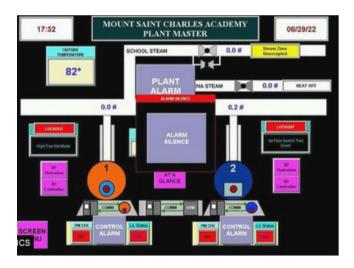


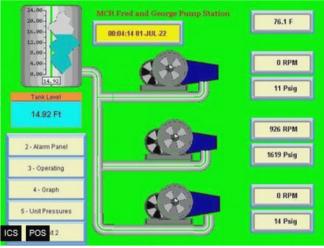


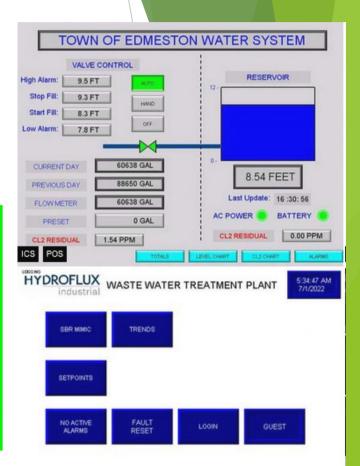


Shodan **Industrial Control Systems**

Industrial Control Systems (<u>link</u>)







Shodan Portugal - Internet Exposure

- Internet Exposure Dashboard (<u>link</u>)
- ► Top Vulnerability
 - ► CVE-2015-0204 CVSS2 4.3 Medium (<u>link</u>)
- ▶ BlueKeep Unpatched (<u>link</u>)
 - ▶ 107 (<u>link</u>)
- Industrial Control Systems
 - **>** 516
- SMB (shared folders)
 - ▶ Authentication Disabled: 2898



Insecure Cameras

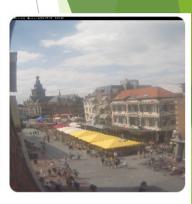
- Browser edit (<u>link</u>)
 - ► Portugal (<u>link</u>)



Live camera in Lisbon, Portugal



Live camera in Lisbon, Portugal



Live camera in Amsterdam, Netherlands



Live camera in Kiefersfelden, Germany



Live camera in PRAGUE, Czech Republic

Penetration Test Portugal - Ministério da Justiça

- ▶ How safe is our information?
- Site URL: https://www.automovelonline.mj.pt/AutoOnlineProd/
 - ▶ Is there a **DEV** site?
 - ▶ Error shows software and version (Apache Tomcat/8.0.41)
 - ► Are there exploits? Exploit Database (<u>link</u>)
- Automatic testing website (<u>link</u>)
- Are these tests legal?
 - ▶ If you don't own the site, it's usually not legal or allowed.

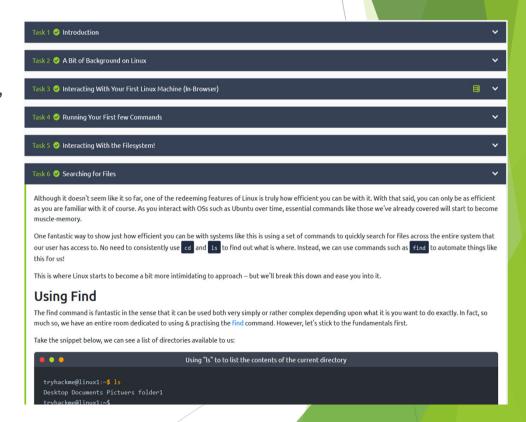
CTF Capture The Flag

- TryHackMe https://tryhackme.com/
- ► HackTheBox https://www.hackthebox.eu/
- VulnHub https://www.vulnhub.com/
- ► OTW https://overthewire.org/wargames/
- PicoCTF https://picoctf.org/
- CryptoPals https://cryptopals.com/
- CryptoHack https://cryptohack.org/



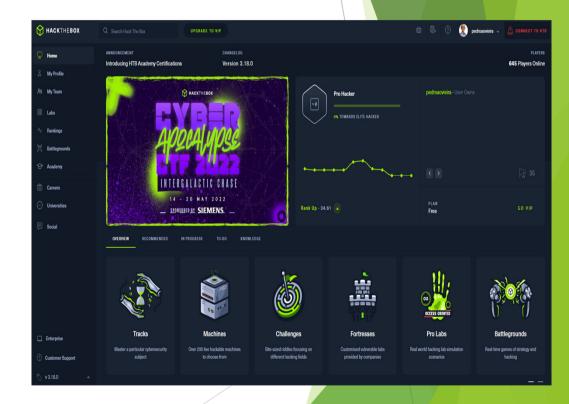
CTF THM - Try Hack Me

- Try Hack Me (link)
 - ➤ TryHackMe is a free online platform for learning cyber security, using hands-on exercises and labs, all through your browser!
- Learn
 - Our content is guided with interactive exercises based on real world scenarios, from hacking machines to investigating attacks, we've got you covered.
- Practice
 - Put your knowledge into practice with gamified cyber security challenges.
- Cost Free or \$10/month



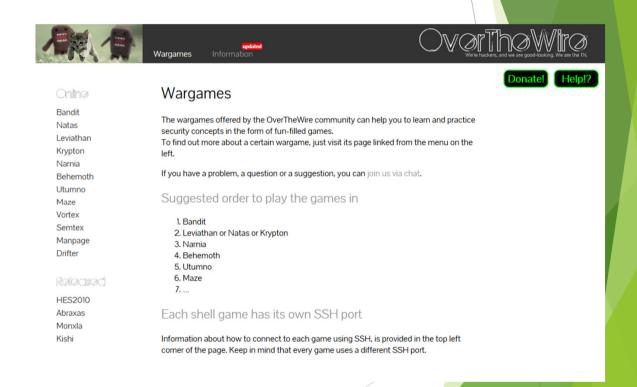
CTF HTB -Hack The Box

- Hack The Box (link)
 - Hack The Box is a massive, online cybersecurity training platform, allowing individuals, companies, universities and all kinds of organizations around the world to level up their hacking skills.
- Challenges
 - Hardware, Crypto, Pwn, Mobile, Reversing, Web, ...
- Machines / Tracks
- Cost Free / €12/month
- Job Board



CTF OTW -Over The Wire

- Over The Wire (link)
- Linux and Web based games
 - ► Linux Bandit
 - Web Natas



Verificar

https://especiais.rr.pt/pegada-digital/pedi-os-meus-dados-a-70-empresas/

Wifi World Map - WiFi Networks

- ► Wigle shell5
- https://wigle.net/map?maplat=41.53443897842117&maplon=-8.437174307569958&mapzoom=21&coloring=density
- mac address lookup
- https://dnschecker.org/mac-lookup.php?query=68-cc-6e-c0-c7-e1





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