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CYBER SECURITY- PRIVACY

CAN YOU PROTECT YOURSELF IN CYBERSPACE?

REALLY?????
WHO WANTS THE LIVE IN A GLASS HOUSE?
CYBER SPACE
CYBER SPACE: A Dangerous Place?
EVERYTHING is BECOMING A COMPUTER?
Cyber Space once a virtual abstraction, can now sense and touch the physical world
Click the following link to kill everybody
WWW.KILL-EVERYBODY.COM
CYBER SECURITY IS NOW BIG BUSINESS?
CYBER SPACE: USA’s Infrastructure—Partial
CYBER SPACE:
China’s Infrastructure
CYBER SPACE: Global Traffic

GLOBAL TRAFFIC MAP 2010
SCOPE OF CYBER SPACE

(U) TREASUREMAP as an Enabler

- Persona Layer
- Cyber Persona Layer
- Logical Network Layer
- Physical Network Layer
- Geographical Layer
VULNERABILITÉS OF CYBER SPACE: Instantaneous Action at a Distance

Asymmetries of Cyber Space

Anonymity

Lack of Borders

Difficulty of Distinction
PRIVACY: Who is after your private Data

“Every time you pick up the phone, dial a number, write an email, make a purchase, travel on the bus carrying a cell phone, swipe a card somewhere, you leave a trace and the government has decided that it’s a good idea to collect it all, everything, even if you’ve never been suspected of any crime.”
PRIVACY: Who is after your private Data

CORPORATIONS

WE COOPERATE WITH CORPORATE SURVEILLANCE BECAUSE IT PROMISES US CONVENIENCE, AND WE SUBMIT TO GOVERNMENT SURVEILLANCE BECAUSE IT PROMISES US PROTECTION.
PRIVACY: Who is after your private Data

CYBER CRIMINALS

The Cyber criminal community is evolved from Morris Worm to the ransomware and other organized crime that have high payoff, many countries are working to stop such attacks, but these attacks are continuously changing and affecting brutally to our businesses and nation.

Cyber crime and viruses initiated, "Morris Worm" and others.

1997: Malicious code, Trojan, Advanced worms
2004: Identity theft, Phishing
2007: DNS attacks, Rise of Botnets, SQL attacks, Anti-Spam sites, Competitive sabotage escalation
2010: Social Engineering, DoS, Botnets, Malicious Email, Ransomware attack, PoS comprised
2013: Banking Malware, Keylogger, Bitcoin Wallet Stealer, Identity Theft, phone Hijacking, Ransomware, PoS attack, Cyber Warfare, Android hack etc.
PRIVACY: HOW CAN YOU PROTECT YOURSELF

HDD ENCRYPTION - BitLocker, PGP
PRIVACY: HOW CAN YOU PROTECT YOURSELF
FILE ENCRYPTION - EFS, FILEVAULT (MAC)
PRIVACY: HOW CAN YOU PROTECT YOURSELF

SECURE E-MAIL: S-MIME, PGP, MAILVELOPE, GMAIL-CONFIDENTIAL MODE, PROTON MAIL from CERN
“ThrowAwayMail.com”
  Provides a randomly generated email

“10 Minute Mail”
  Provides a randomly generated email that shuts down after 10 minutes
  Allows you to see emails sent to the address (ex: account verification emails)

“SMS Receive Free”
  Provides phone numbers that can be used for verification codes, etc.
  Each number has its own page, where you can see all messages sent to that number
PRIVACY: HOW CAN YOU PROTECT YOURSELF

Secure Messaging

Signal  Telegram  Whatsapp

Which One Should You Choose?
PRIVACY: HOW CAN YOU PROTECT YOURSELF
ANTIVIRUS-MALWARE-SPYWARE-FIREWALLS
PRIVACY: HOW CAN YOU PROTECT YOURSELF

PASSWORD MANAGEMENT - LastPass - Keeper
PRIVACY: HOW CAN YOU PROTECT YOURSELF
DELETING DATA - ERASER

ERASER

PGP Shredder
PRIVACY: HOW CAN YOU PROTECT YOURSELF
SECURE CLOUD STORAGE - SPIDEROAK
PRIVACY: HOW CAN YOU PROTECT YOURSELF
SECURE PRIVATE BROWSING - TOR
PRIVACY: HOW CAN YOU PROTECT YOURSELF
SECURE PRIVATE SEARCH ENGINE - DUCK DUCK GO
PRIVACY: HOW CAN YOU PROTECT YOURSELF

Browser Extensions

- Adblock Plus
- HTTPS Everywhere
- Privacy Badger
- Qwant
- Shodan
- Go Rando
- Facebook Demetricator
PRIVACY: HOW CAN YOU PROTECT YOURSELF

VPNs

Surfshark

Psiphon

CyberGhost

NordVPN

TunnelBear VPN

Mullvad VPN
PRIVACY: HOW CAN YOU PROTECT YOURSELF
MULTIFACTOR AUTHENTICATION (MFA)
PRIVACY: HOW CAN YOU PROTECT YOURSELF
Anti Facial Recognition Dressing for Surveillances Age
PRIVACY: HOW CAN YOU PROTECT YOURSELF

Anti Facial Recognition

CAMERA ADVERSARIA
PRIVACY: HOW CAN YOU PROTECT YOURSELF

SECURE WIRELESS CONNECTION - WPA2
PRIVACY: HOW CAN YOU PROTECT YOURSELF

https://www.stopthinkconnect.org/

https://www.lockdownyourlogin.com/

https://staysafeonline.org/

https://www.dhs.gov/see-something-say-something
THE CONSTITUTION AND CYBERSPACE
FOURTH AMENDMENT

The Fourth Amendment of the U.S. Constitution provides, "[t]he right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized."

The ultimate goal of this provision is to protect people’s right to privacy and freedom from arbitrary governmental intrusions.

The protection under the Fourth Amendment can be waived if one voluntarily consents to or does not object to evidence collected during a warrantless search or seizure.

Private intrusions not acting in the color of governmental authority are exempted from the Fourth Amendment.
GOOGLE PRIVACY POLICY

https://myaccount.google.com/

https://safety.google/privacy/privacy-controls/
DATA COLLECTED BY APPS: EXAMPLE

- Take pictures and videos
- Record audio
- Location information (Approximate, Precise)
- Read your Web bookmarks and history
- Modify or delete contents of your SD card
- Control NFC
- Add or remove accounts
- Change your audio settings
- Read sync settings
- Install shortcuts
- Access Mobile Device Management (MDM) content providers
GDPR: Global Data Privacy Regulations

- Increased Territorial Scope
- Penalties up to 4% revenue or 20 Million Euro
- Consent must be intelligible and accessible
- Breach notification 72 hours
- Right of access – free copy
- Right to be forgotten
- Data Portability
- Privacy By Design
- Data Protection Officers requirements
CCPA: California Consumer Privacy Act

• Right to know all data collected by a business on you.
• Right to say NO to the sale of your information.
• Right to DELETE your data.
• Right to be informed of what categories of data will be collected about you prior to its collection, and to be informed of any changes to this collection.
• Mandated opt-in before sale of children’s information (under the age of 16).
• Right to know the categories of third parties with whom your data is shared.
• Right to know the categories of sources of information from whom your data was acquired.
• Right to know the business or commercial purpose of collecting your information.
• Enforcement by the Attorney General of the State of California.
• Private right of action when companies breach your data, to make sure these companies keep your information safe.
PRIVACY REGULATIONS APPEAR AROUND THE WORLD

- General Data Protection Regulation (GDPR)
- California Consumer Privacy Act (CCPA)
- California Privacy Rights Act (CPRA)
- Virginia Consumer Data Protection Act (VCDPA)
- Colorado Privacy Act (CPA)
- Utah Consumer Privacy Act (UCPA)
- Connecticut Data Privacy Act (CTDPA)
- Iowa Privacy Bill
- Brazil's General Data Privacy Law (LGPD)
- Upcoming: Australia
- Upcoming: India
- Upcoming: Canada
PRIVACY REGULATIONS IN USA

- California Privacy Rights Act (CPRA). January 1\textsuperscript{st}, 2023
- Virginia Consumer Data Protection Act (VCDPA). January 1\textsuperscript{st}, 2023
- Colorado Privacy Act (CPA). July 1\textsuperscript{st}, 2023
- Utah Consumer Privacy Act (UCPA). December 31\textsuperscript{st}, 2023
- Connecticut Data Privacy Act (CTDPA). July 1\textsuperscript{st}, 2023
- Iowa Privacy Bill. January 1\textsuperscript{st}, 2025
PRIVACY REGULATIONS IN USA

47% of Californian online adults have exercised their CCPA right to ask companies to stop selling their data

30% of Californian online adults have asked to be forgotten

Q: Which of the following best describes your use of these CCPA rights?  
Base: 630 Online adults in California  
Source: Forrester's Media And Marketing Benchmark Recontact Survey, 2022

Forrester
137 out of 194 countries have put in place legislation to secure the protection of data and privacy.

DEEP FAKE, AI, CHAT GPT, FUTURE
DEEP FAKE, AI, CHAT GPT, FUTURE
Are Quantum Computers about to Break Online Privacy?
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Berkeley Quantum Synthesis Toolkit (BQSKit)

BQSKit is a superoptimizing quantum compiler and research vehicle that combines ideas from several projects at Berkeley Lab into an easily accessible and quickly extensible software suite.

D-Wave's 500-Qubit Machine Hits the Cloud

Experimental prototype offers sneak peek of 7,000-qubit quantum computer

IBM expects to build quantum computers of increasing complexity over the next few years, starting with those that use the Condor processor or multiple Heron processors in parallel.
“I AM REGULARLY ASKED WHAT THE AVERAGE INTERNET USER CAN DO TO ENSURE HIS SECURITY. MY FIRST ANSWER IS USUALLY ‘NOTHING; YOU’RE SCREWED’.”

BRUCE SCHNEIER