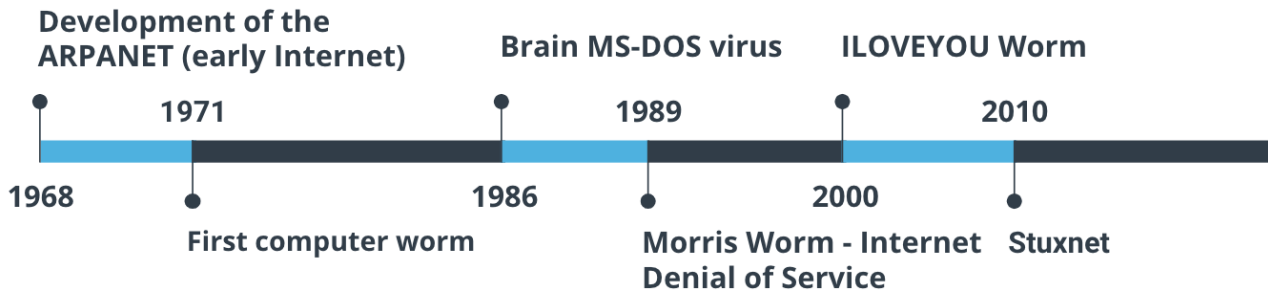


Cybersecurity

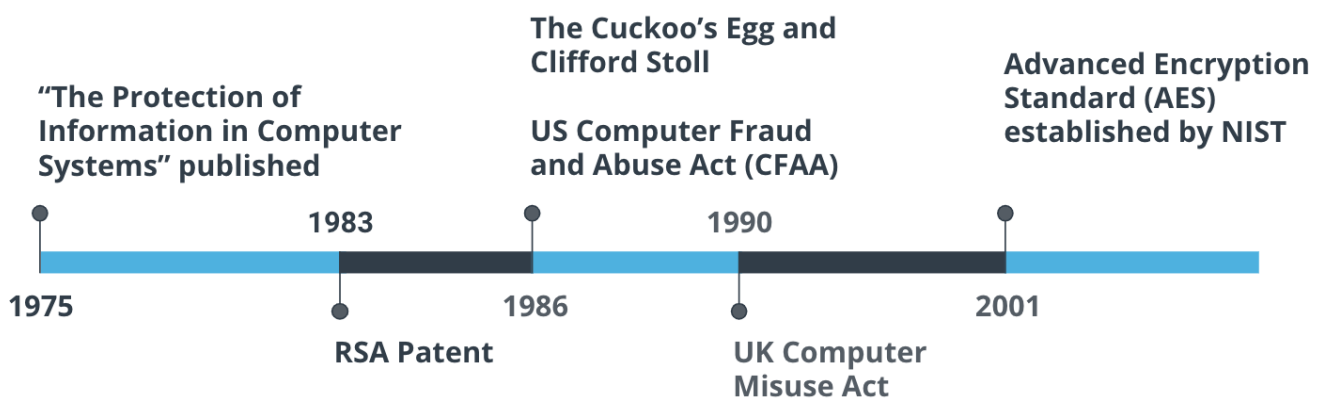
History of Computer Viruses and Worms



With the start of the Internet in the late 1960s, known then as the ARPANET came a need to secure the data, connections, and computer systems for those using it; mostly research institutions, universities, and governments. Computers in the early days of the Internet often didn't have basic protection and used telephone modems to dial-into the network. Highlights of memorable computer viruses and worms include:

- 1968 - Development of the ARPANET (early Internet)
- 1971 - First reported computer worm - Creeper
 - It didn't affect any computer but it displays message on screen stating, "I am a creeper , catch me if you can"
- 1986 - Brain MS-DOS virus
- 1989 - Morris Worm - Internet Denial of Service
- 2000 - ILOVEYOU Worm (written in VB script using social engineering infected millions within hour of realese)
- 2010 - Stuxnet

Timeline of Computer Viruses, Mapcon



- 1975 - "The Protection of Information in Computer Systems" published

- 1983 - RSA Patent
- 1986 - The Cuckoo's Egg and Clifford Stoll
- 1986 - US Computer Fraud and Abuse Act (CFAA)
- 1990 - UK Computer Misuse Act
- 2001 - Advanced Encryption Standard (AES) established by NIST

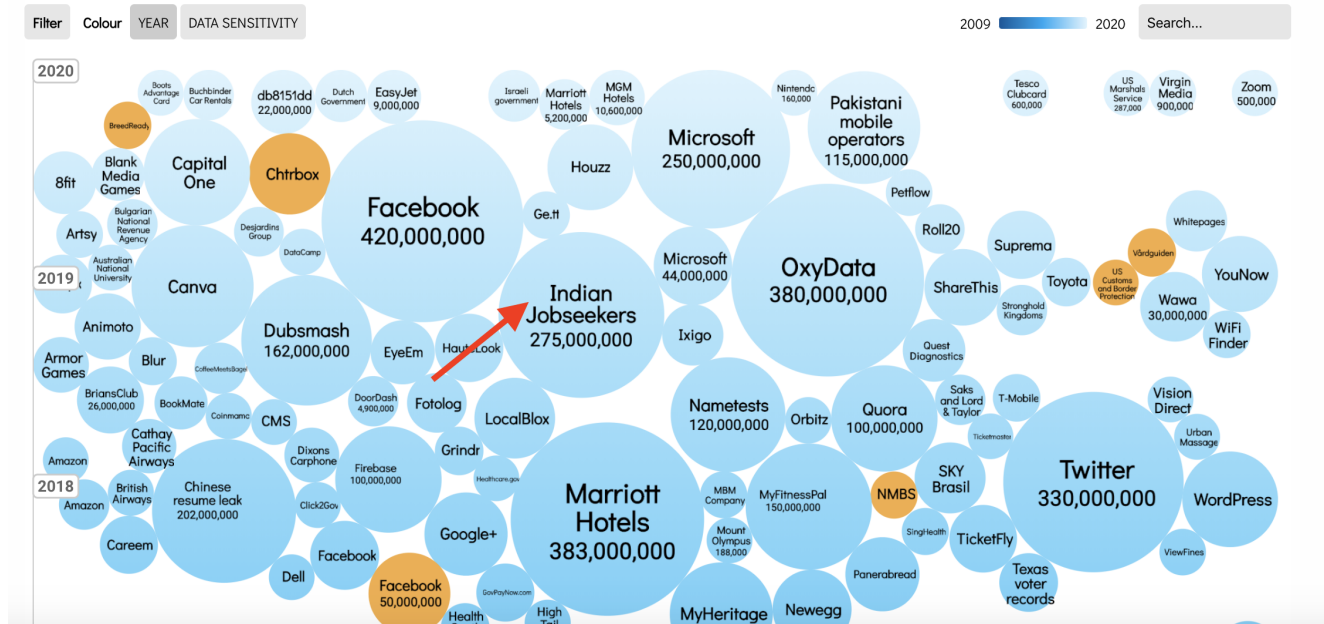
In September of 1983 when MIT was granted a patent that introduced the RSA (Rivest-Shamir-Adleman) algorithm, which was one of the first public key cryptosystems

Security Trends

- Phishing: A technique for attempting to acquire sensitive data, such as bank account numbers, through a fraudulent solicitation in email or on a web site, in which the perpetrator masquerades as a legitimate business or reputable person.
- Malware: Software or firmware intended to perform an unauthorized process that will have an adverse impact on the confidentiality, integrity, or availability of an information system. A virus, worm, Trojan horse, or other code-based entity that infects a host. Spyware and some forms of adware are also examples of malicious code.
- Ransomware: A type of malicious software designed to block access to a computer system until a sum of money is paid.
- Business Email Compromise: An exploit in which an attacker obtains access to a business email account and imitates the owner's identity, in order to defraud the company and its employees, customers or partners.
- Internet of Things: The interconnection via the Internet of computing devices embedded in everyday objects, enabling them to send and receive data.

World's Biggest Data Breaches & Hacks

Select losses greater than 30,000 records

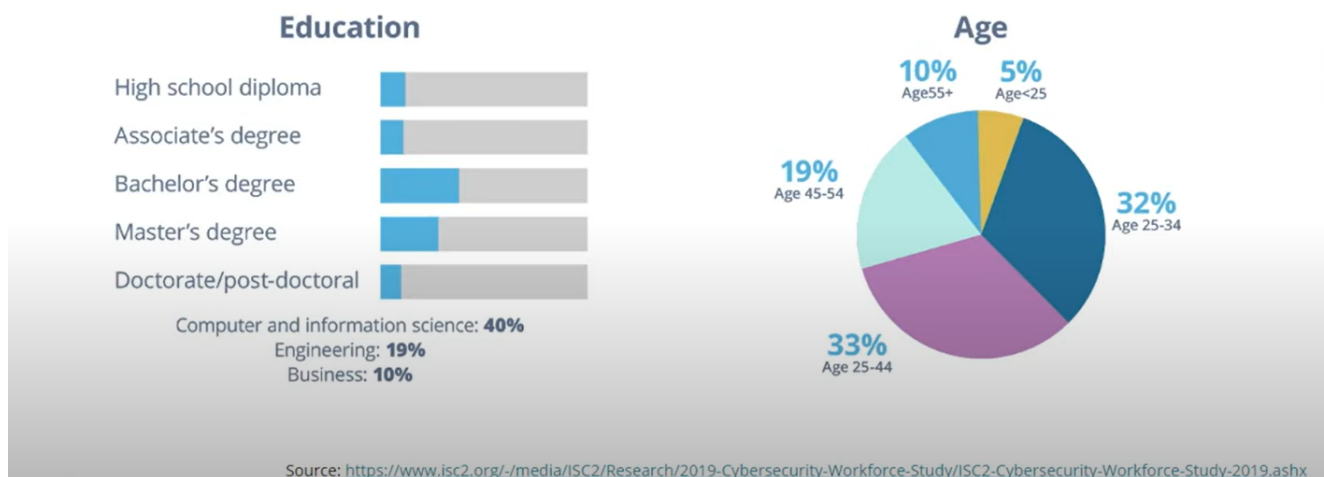


From the 2020 Verizon Data Breach Investigations Report:

Cybersecurity Skills Gap

Cybersecurity Skills Gap

What do cybersecurity professionals look like?



Link for the website:

[Cybersecurity pathways](#)

Security Principles

- Economy of mechanism -> Economy of Mechanism means to keep things small and simple.
- Fail-safe defaults
- Complete mediation
- Open design
- Separation of privilege
- Least privilege
- Least common mechanism
- User-friendly interface

Confidentiality - Integrity - Availability

The Security CIA

