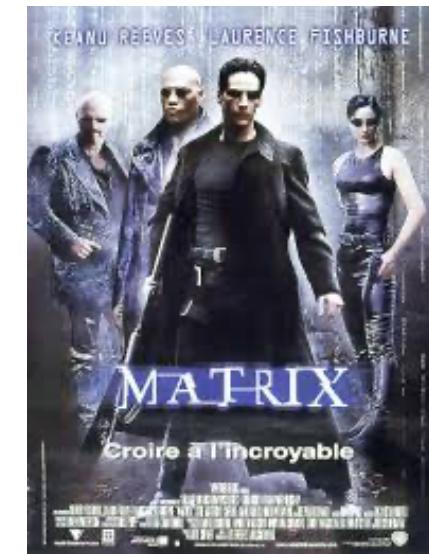
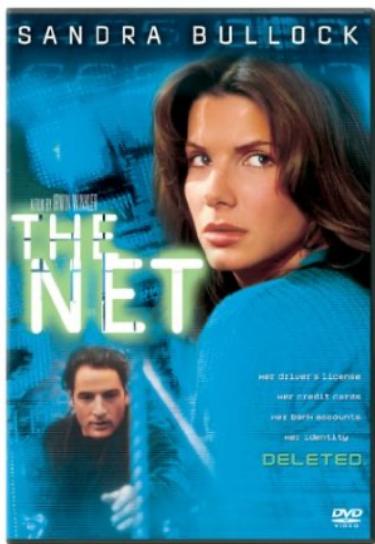
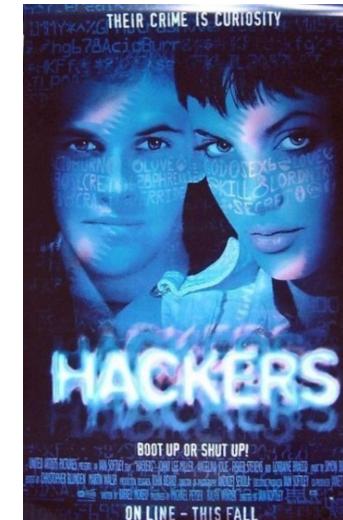
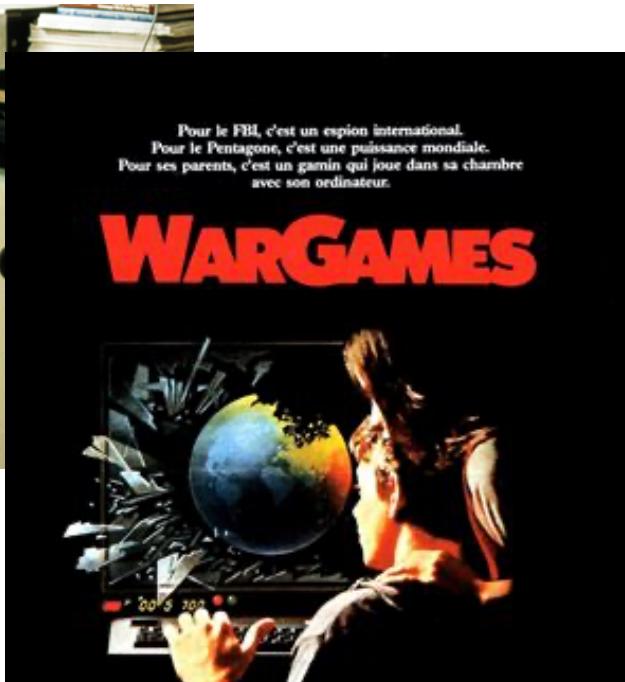
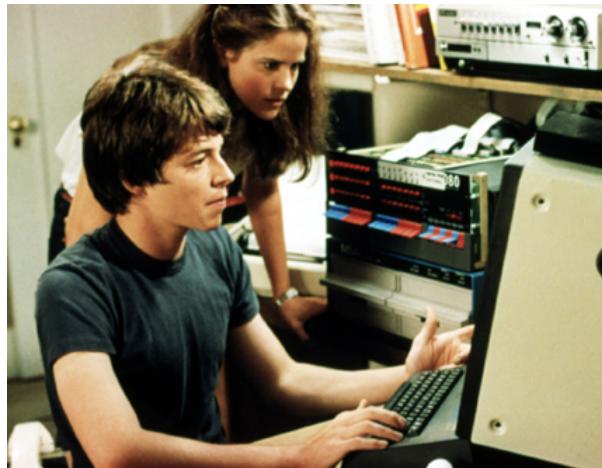


# Attacker Model

- Depending on objectives, resources, and time available
  - Script Kiddies
  - Black Hat Hacker
  - Organized Crime
  - Governments



# Attacker Model according to Hollywood



# Software Security: History

*Black Hat: a hacker who "violates computer security for little reason beyond maliciousness or for personal gain"*

- The early black-hat hackers
  - 1980: Legion of Doom (US), Chaos Computer Club (GER)
  - 1988: Robert Tappan Morris' Internet worm (created to determine the size of the Internet) leads to the founding of CERT (Computer Emergency Response Team) – sentenced to 10000\$ and general interest work – now a professor at MIT
  - 1979-95: Kevin Mitnick attacks DEC, Pacific Bell, (arrested in 1995 – 5 years in prison – now security consultant)



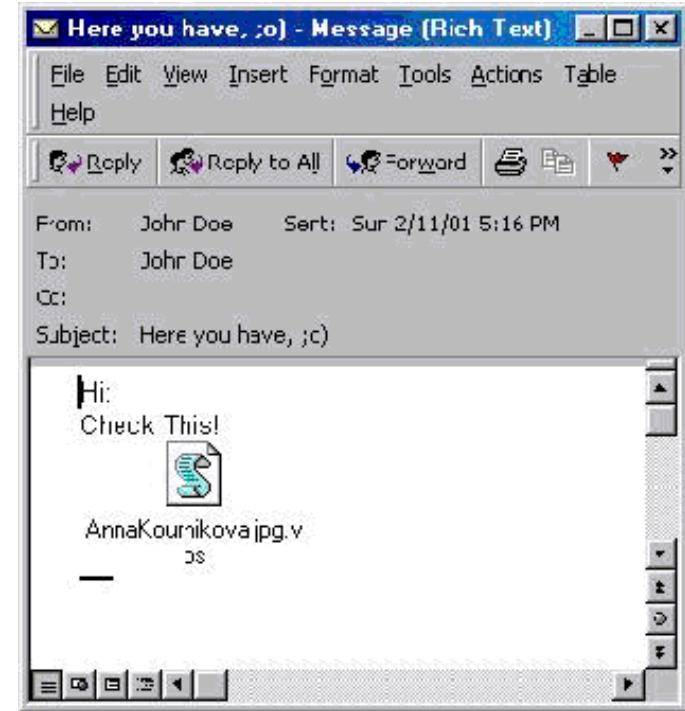
# Software Security: History

- Espionage, cyberwars
  - 1986: Clifford Stoll uncovers the East German KGB spy Markus Hess accessing Lawrence Berkeley National Laboratory computers (“The Cuckoo’s Egg”)
  - 2007: cyberwar in Estonia
  - 2010: Stuxnet (NSA?) attacks nuclear plant in Iran, Flame, Duquu
  - 2013: Snowden revelations



# Software Security: History

- Large-scale cybercrime, fraud, extortion, vandalism
  - 1999-2004: the Worms (Melissa, ILOVEYOU, Sasser, Nimda, CodeRed ...)
  - 2015-now: botnets (Kraken, Zeus, Mirai on IoT)
  - 2000-now: Blackmail DDoS on merchant websites (2000: Michael Calce alias Mafiaboy - 2015: Armada Collective)
  - Attacks over mobile, embedded, and IoT are on the rise



# Cybercriminals ...

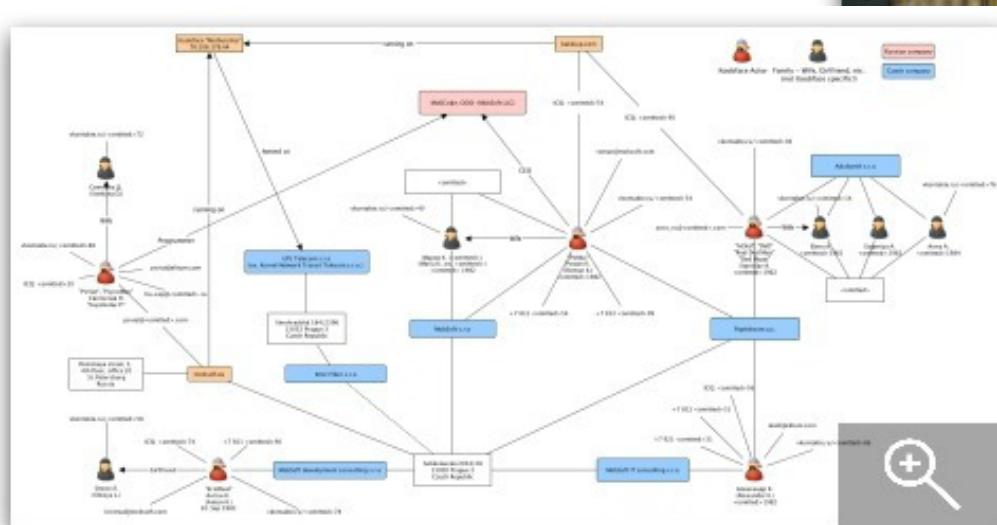
- Klik Party, 2007



Source: Engin Kirda

# Cybercriminals ...

- Koobface Gang



<https://nakedsecurity.sophos.com/koobface/>