Computer Security –
Past, Present, and Future

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Malware: endless room for creativity

- 1999: Denial of Service (DoS and DDoS)
- 2003: Super fast worms: Slammer
- 2004: Cell phone worms: Cabir, Skulls, CommWarrior
- 2004: Phishing
- 2005: bot-nets, keyloggers
- 2006: Transaction Generators, P2P bot-nets
- 2007-2017: ???
The state of software

Software Vulnerabilities: CERT Statistics
Increase in Phishing incidents, 2005-6

Phishing Reports Received October-July

- October: 6957
- December: 8975
- February: 12845
- March: 13468
- April: 12883
- May: 14411
- June: 14987
- July: 15050
- June: 14135
URLs hosting infectious code

APWG Stats for 2005-6
The next 10 years

- **Shifting battle ground:**
  - Mobile devices: cell phones, PDAs
  - Home entertainment systems
  - Cars (e.g. Lexus Virus)
  - US election equipment
Research Advances

- Tools to help end-users secure their machines:
  - Better security HCI
  - Tools to protect online user credentials

- Accurate software bug finding tools

- Network quarantine/isolation methods

- Crypto/Security tools to protect user privacy.