Surviving Security Groundhog Day

Ron Woerner, CISSP, CISM

April 2024

Who am I?

Ron Woerner[1]

- Hacker
- CyberSecurity Consultant / Trusted Advisor[2]
- Professor, Bellevue University
- 25+ years experience in IT / Security
- Blogger, writer, and podcaster

Websites & Social Media:
https://linktr.ee/cyberron

Slides available at https://github.com/hackerron/SecurityGHD/

LinkedIn:
https://www.linkedin.com/in/ronwoerner/

[1] Who I'm claiming to be atm
[2] Can't say my employer

AI – 2024 Hottest tech topic

How "old" is AI?

[iow, how long has it been a thing?]

Dartmouth Summer Research Project on Artificial Intelligence (DSRPAI) in 1956.

Source: https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/

AI Risks & Threats

New?

Prompt: I'm building a presentation on cybersecurity and AI for a technical audience. Provide 5 ways ChatGPT and AI can be used maliciously.

- ➢ Automated social engineering
- ➢ Supercharged phishing
- ➢ Deepfakes and disinformation
- ➢ Enhanced cyber reconnaissance
- ➢ Malware automation & mutation

Discussions of artificial intelligence (AI) often swirl with mysticism regarding how an AI system functions. The reality is far more simple:

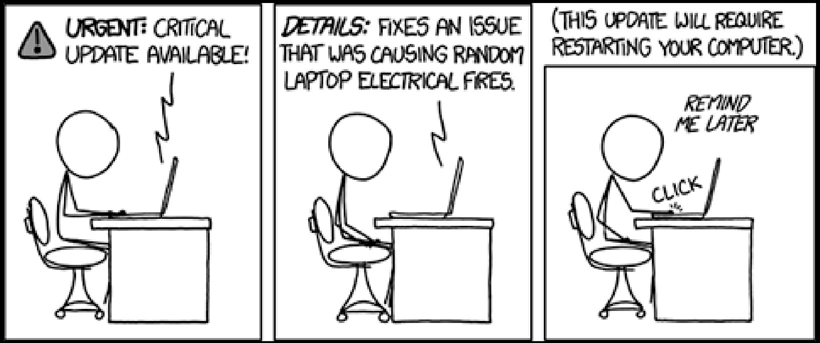
AI is a type of software system.

CYBERSECURITY &
INFRASTRUCTURE
SECURITY AGENCY

AMERICA'S CYBER DEFENSE AGENCY

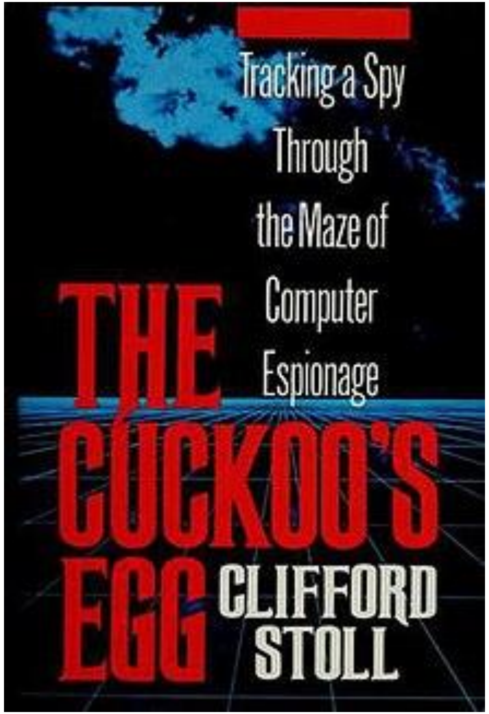
https://www.cisa.gov/news-events/news/software-must-be-secure-design-and-artificial-intelligence-no-exception

It's like deja-vu,
all over again."
- Yogi Berra


URGENT: CRITICAL UPDATE AVAILABLE!
DETAILS: FIXES AN ISSUE THAT WAS CAUSING RANDOM LAPTOP ELECTRICAL FIRES.
(THIS UPDATE WILL REQUIRE RESTARTING YOUR COMPUTER.)
REMIND ME LATER
CLICK

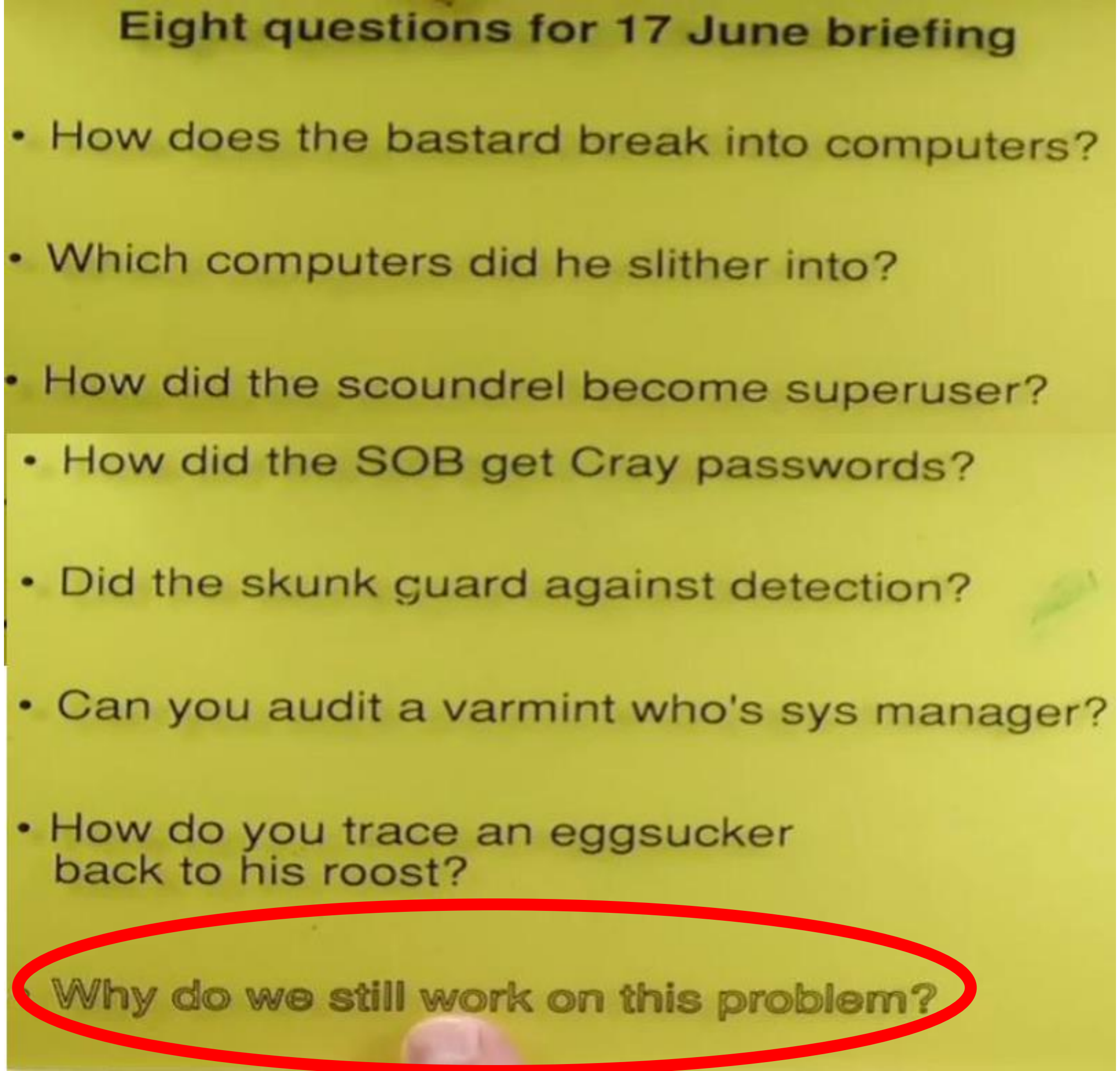
BACK IN TIME

Ron Woerner, April 2024



When?

CTI Summit Keynote - Cliff Stoll - (Still) Stalking the Wily Hacker
https://www.youtube.com/watch?v=1h7rLHNXio8



Eight questions for 17 June briefing

- How does the bastard break into computers?
- Which computers did he slither into?
- How did the scoundrel become superuser?
- How did the SOB get Cray passwords?
- Did the skunk guard against detection?
- Can you audit a varmint who's sys manager?
- How do you trace an eggsucker back to his roost?
- Why do we still work on this problem?

TLP:WHITE

NCCIC | NATIONAL CYBERSECURITY &
COMMUNICATIONS INTEGRATION CENTER

AWARENESS BRIEFING:

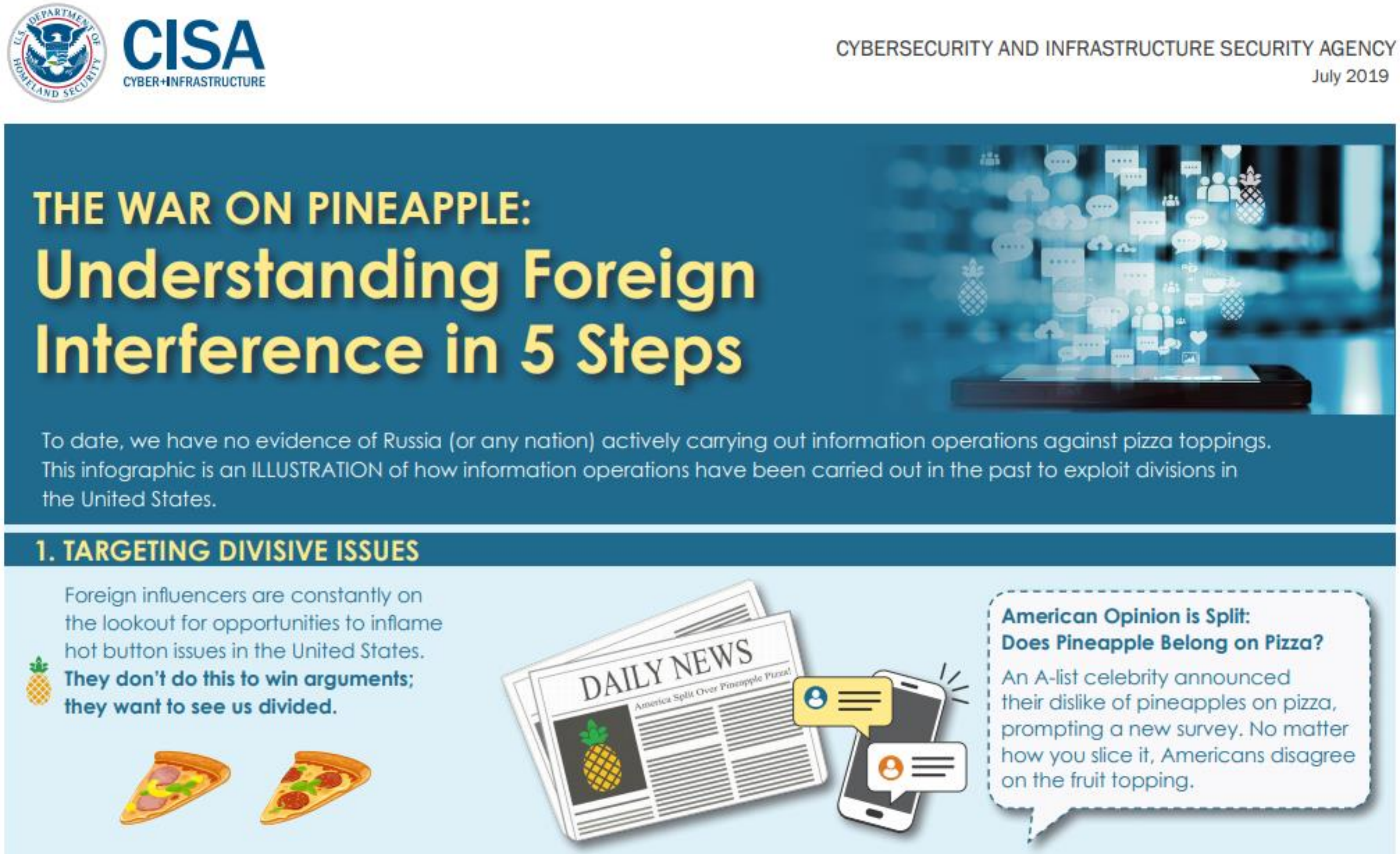
RUSSIAN ACTIVITY AGAINST CRITICAL INFRASTRUCTURE

NCCIC

https://www.cisa.gov/news-events/alerts/2018/03/15/russian-government-cyber-activity-targeting-energy-and-other-critical

National Debate

Pineapple on Pizza?



CISA
CYBER+INFRASTRUCTURE

CYBERSECURITY AND INFRASTRUCTURE SECURITY AGENCY
July 2019

THE WAR ON PINEAPPLE: Understanding Foreign Interference in 5 Steps

To date, we have no evidence of Russia (or any nation) actively carrying out information operations against pizza toppings. This infographic is an ILLUSTRATION of how information operations have been carried out in the past to exploit divisions in the United States.

1. TARGETING DIVISIVE ISSUES

Foreign influencers are constantly on the lookout for opportunities to inflame hot button issues in the United States. **They don't do this to win arguments; they want to see us divided.**

American Opinion is Split: Does Pineapple Belong on Pizza?

An A-list celebrity announced their dislike of pineapples on pizza, prompting a new survey. No matter how you slice it, Americans disagree on the fruit topping.

https://www.cisa.gov/sites/default/files/publications/19_1008_cisa_the-war-on-pineapple-understanding-foreign-interference-in-5-steps.pdf

Phishing Still Works

WHY PHISHING SCAMS KEEP WORKING
Enter your bank account number.
SCAM.
DilbertCartoonist@gmail.com
Dilbert.com
WAIT FOR IT
Enter your bank account number.
SCAM.
5-19-14 ©2014 Scott Adams, Inc./Dist. by Universal Uclick
THERE IT IS
Enter your bank account number.
OKEY-DOKEY.

And ransomware is still a problem.

https://spin.ai/resources/ransomware-tracker/

Eugene Spafford’s first principal of security administration:

*If you have responsibility for security, but have no authority to set rules or punish violators, your role is to take the blame when something goes wrong.**

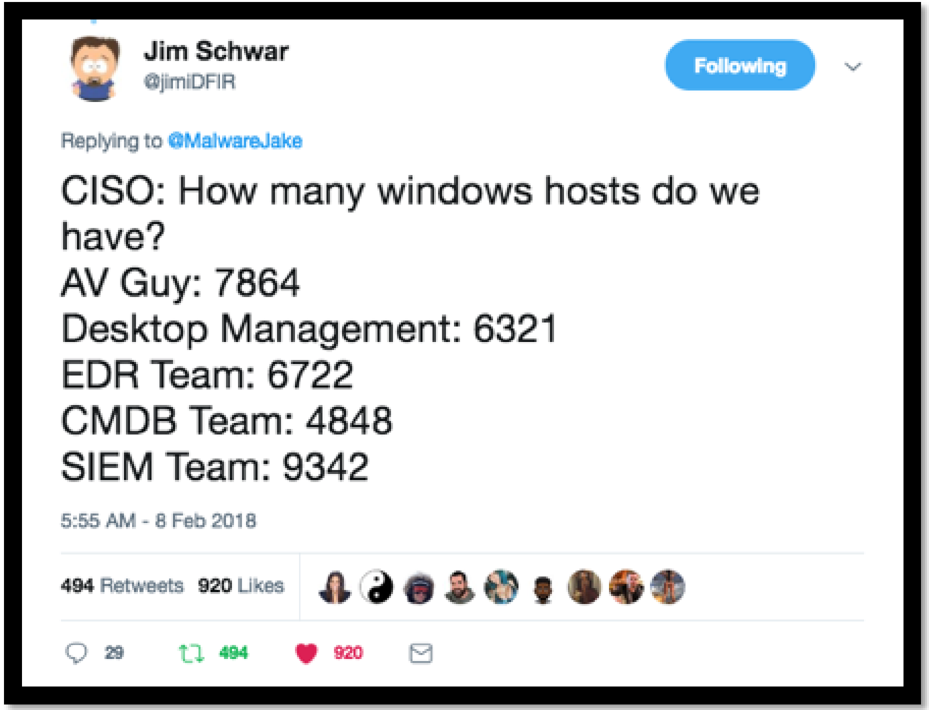
* Garfinkle & Spafford, ***Practical Unix & Internet Security***, O’Reilly & Associates, Inc, 1996, p.39.

Where's our stuff?

"Asset management isn't sexy. Penetration testing and red team and analysis gets all the job reqs, because it's far more flashy. Effective security is boring."

- Nathan W Burke

https://nmap.org/



Jim Schwar
@jimiDFIR

Replying to @MalwareJake

CISO: How many windows hosts do we have?
AV Guy: 7864
Desktop Management: 6321
EDR Team: 6722
CMDB Team: 4848
SIEM Team: 9342

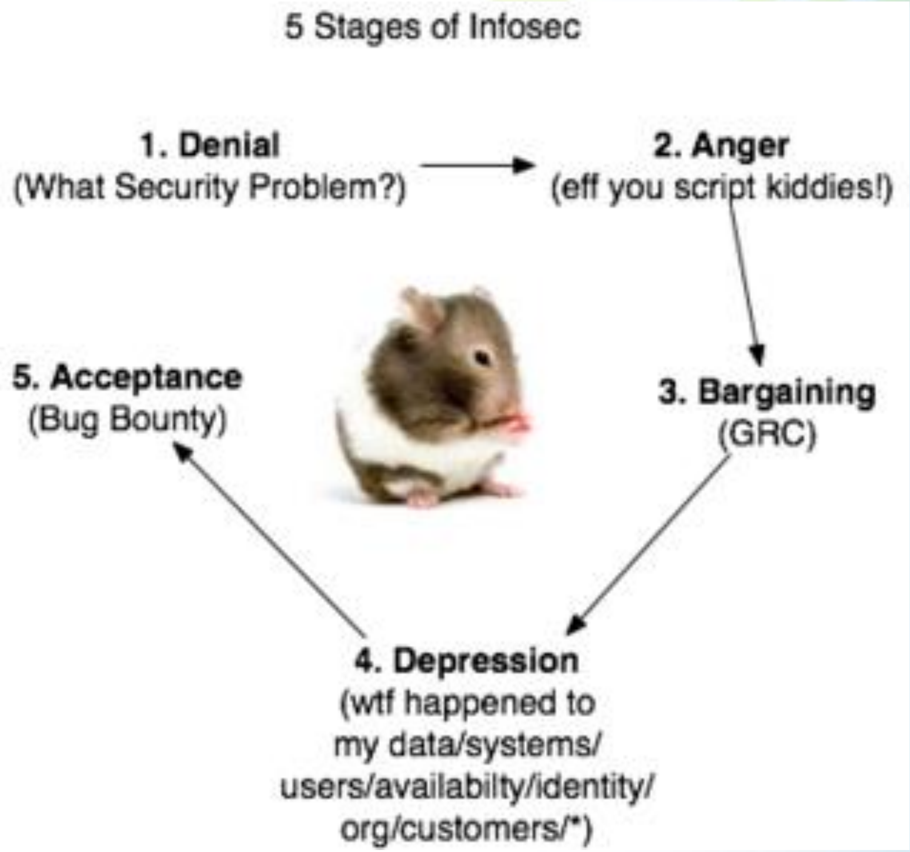
5:55 AM - 8 Feb 2018

494 Retweets 920 Likes

Stuck!

Security Groundhog Day

Stuck!



5 Stages of Infosec

1. Denial (What Security Problem?)

2. Anger (eff you script kiddies!)

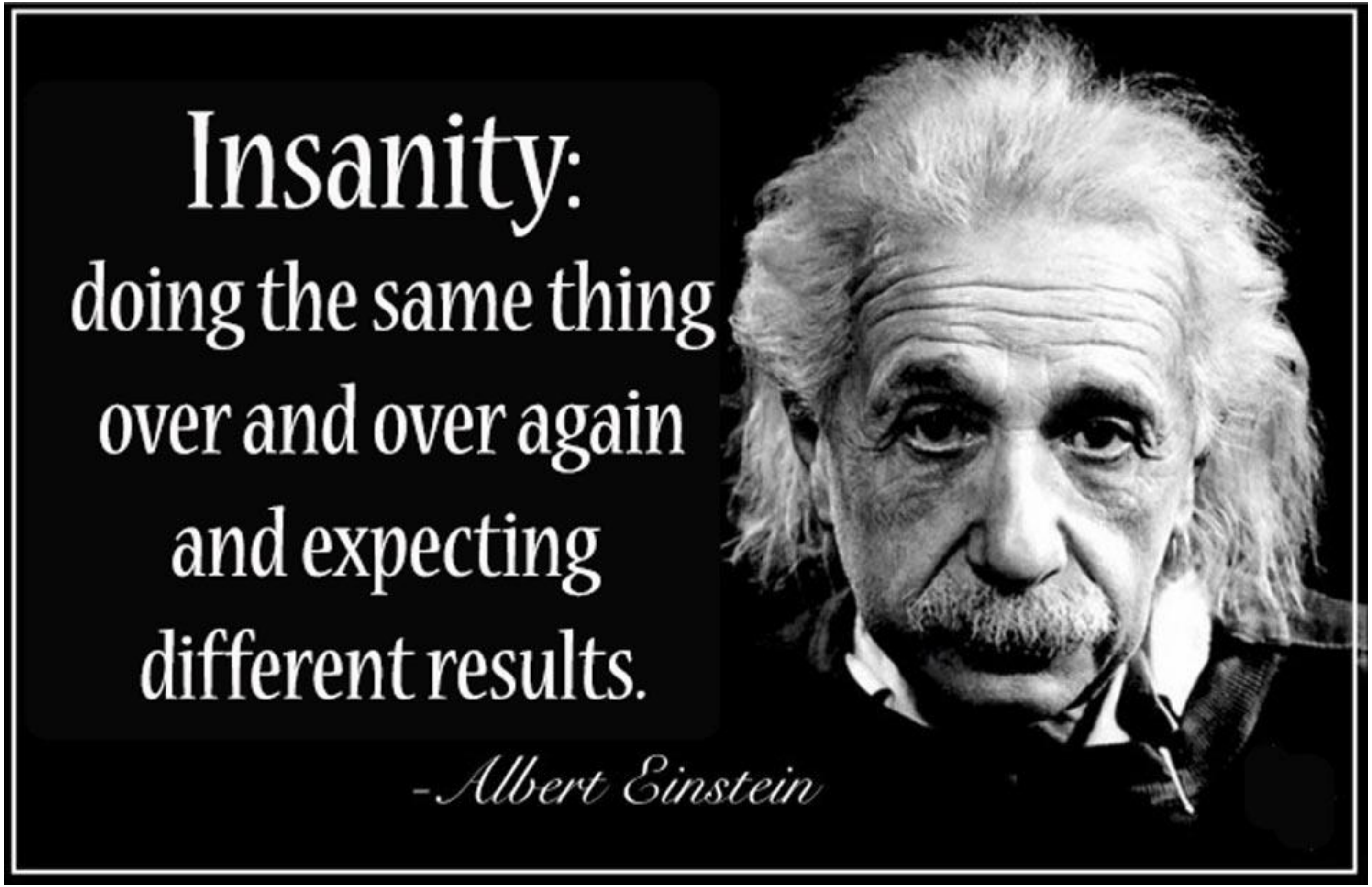
3. Bargaining (GRC)

4. Depression (wtf happened to my data/systems/ users/availabilty/identity/ org/customers/*)

5. Acceptance (Bug Bounty)

2. HT to Andrew Jacquith

http://www.markerbench.com/blog/2005/05/04/Escaping-the-Hamster-Wheel-of-Pain/



Insanity:
doing the same thing
over and over again
and expecting
different results.

-Albert Einstein

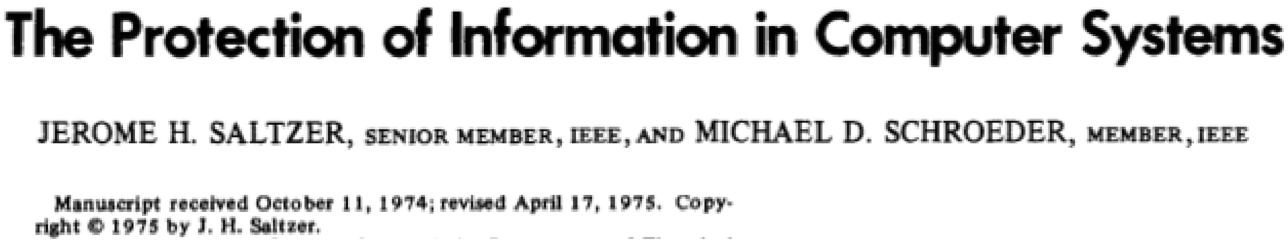
I KEEP HITTING THE ESCAPE KEY...
BUT I'M STILL HERE

somewhere to sleep, somewhere to sleep, to rest my head.

Study History

"Those who don't study history are doomed to repeat it. Yet those who *do* study history are doomed to stand by helplessly while everyone else repeats it."

"It is said that if you know your enemies and know yourself, you will not be imperiled in a hundred battles;
if you do not know your enemies but do know yourself, you will win one and lose one;
if you do not know your enemies nor yourself, you will be imperiled in every single battle."



The Protection of Information in Computer Systems

JEROME H. SALTZER, SENIOR MEMBER, IEEE, AND MICHAEL D. SCHROEDER, MEMBER, IEEE

Manuscript received October 11, 1974; revised April 17, 1975. Copyright © 1975 by J. H. Saltzer.

- Least privilege
- Economy of mechanism
- Complete mediation
- Open design
- Separation of privilege
- Least common mechanism
- Psychological acceptability
- Fail-safe defaults

The Security Principles of Saltzer and Schroeder, as illustrated with Star Wars

By Adam Shostack
https://shostack.org/blog/the-security-principles-of-saltzer-and-schroeder

https://www.cs.virginia.edu/~evans/cs551/saltzer/

Dr. Grace Murray Hopper

“The only phrase I’ve ever disliked is, ‘Why, we’ve always done it that way.’ I always tell young people, ‘Go ahead and do it. You can always apologize later.'”

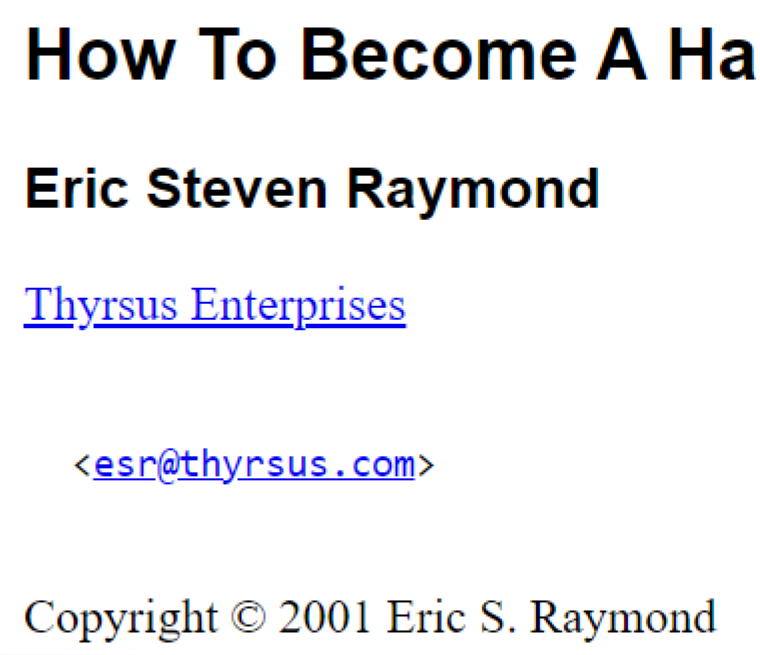
“To me programming is more than an important practical art. It is also a gigantic undertaking in the foundations of knowledge.”

“I've always been more interested in the future than in the past.”

Photograph from 1984

https://en.wikipedia.org/wiki/Grace_Hopper

Be a Hacker

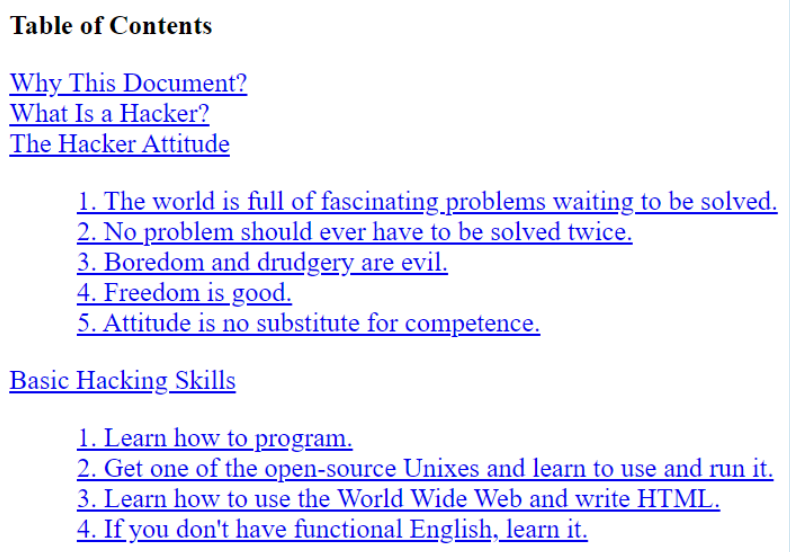


How To Become A Hacker

Eric Steven Raymond

Thyrsus Enterprises

<esr@thyrsus.com>



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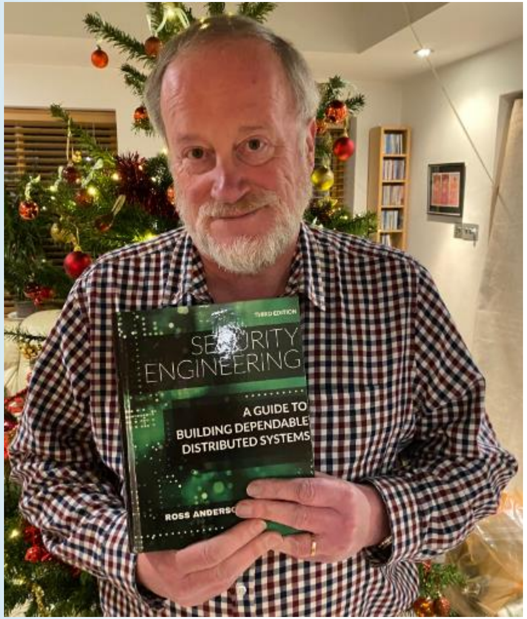
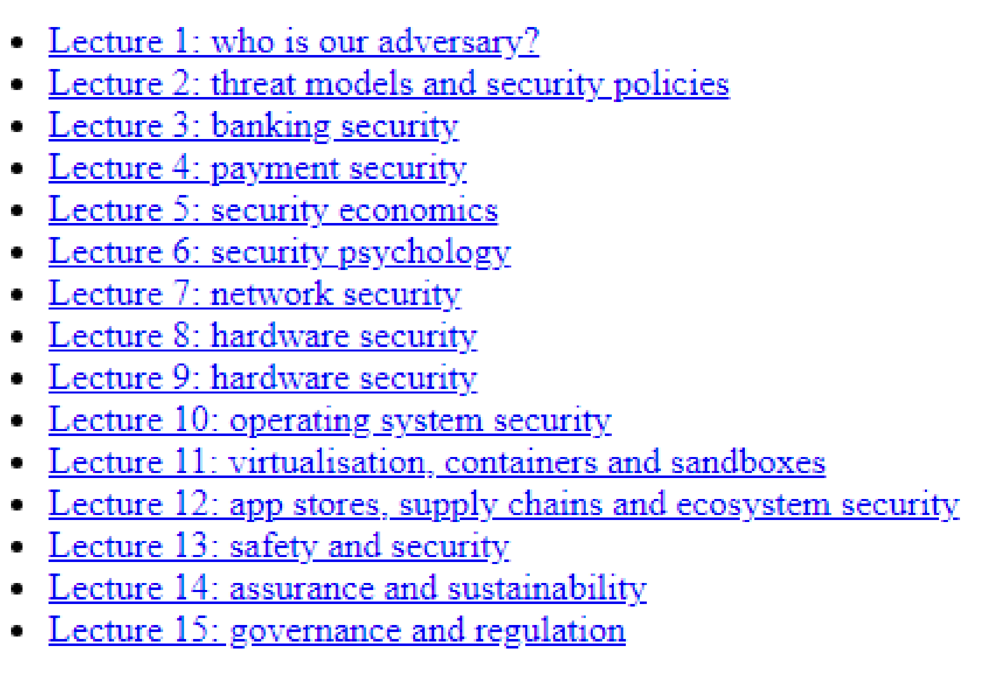
http://www.catb.org/~esr/faqs/hacker-howto.html

Security Engineering

Dr. Ross Anderson





- Lecture 1: who is our adversary?
- Lecture 2: threat models and security policies
- Lecture 3: banking security
- Lecture 4: payment security
- Lecture 5: security economics
- Lecture 6: security psychology
- Lecture 7: network security
- Lecture 8: hardware security
- Lecture 9: hardware security
- Lecture 10: operating system security
- Lecture 11: virtualisation, containers and sandboxes
- Lecture 12: app stores, supply chains and ecosystem security
- Lecture 13: safety and security
- Lecture 14: assurance and sustainability
- Lecture 15: governance and regulation

https://www.cl.cam.ac.uk/~rja14/book.html

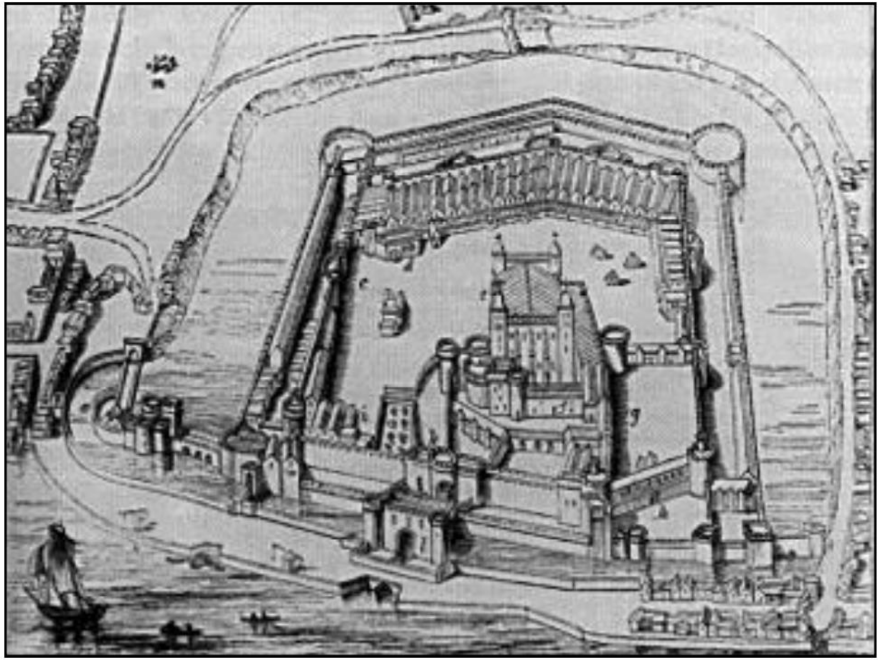
*Everything I Needed to Know About **Network** Security I Learned at the Tower of London*

Castle Lecture

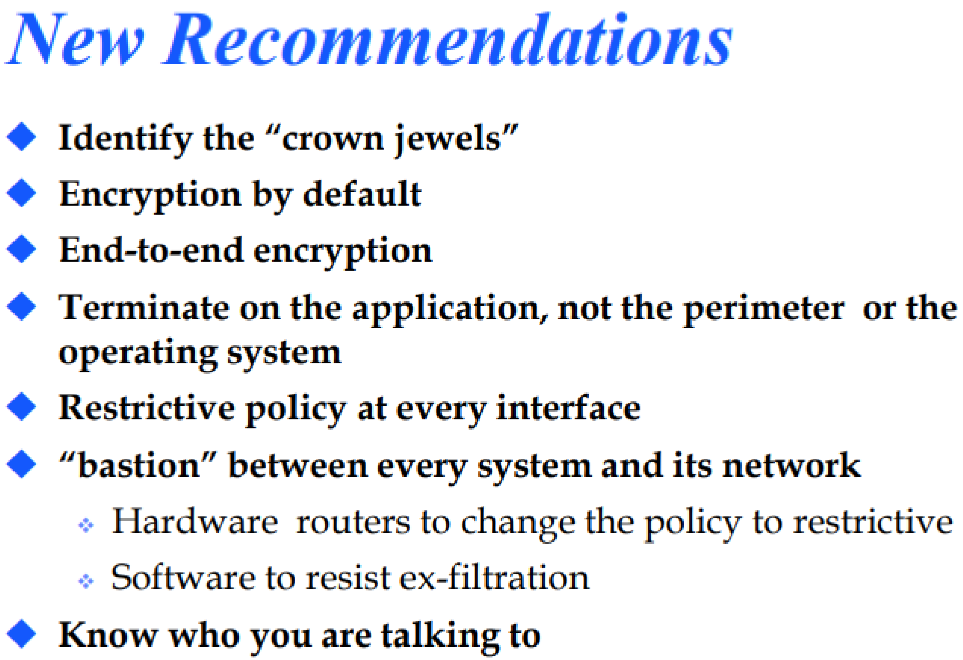
April 10, 2002

United States Military Academy
West Point, NY

William Hugh Murray, CISSP
whmurray@sprynet.com



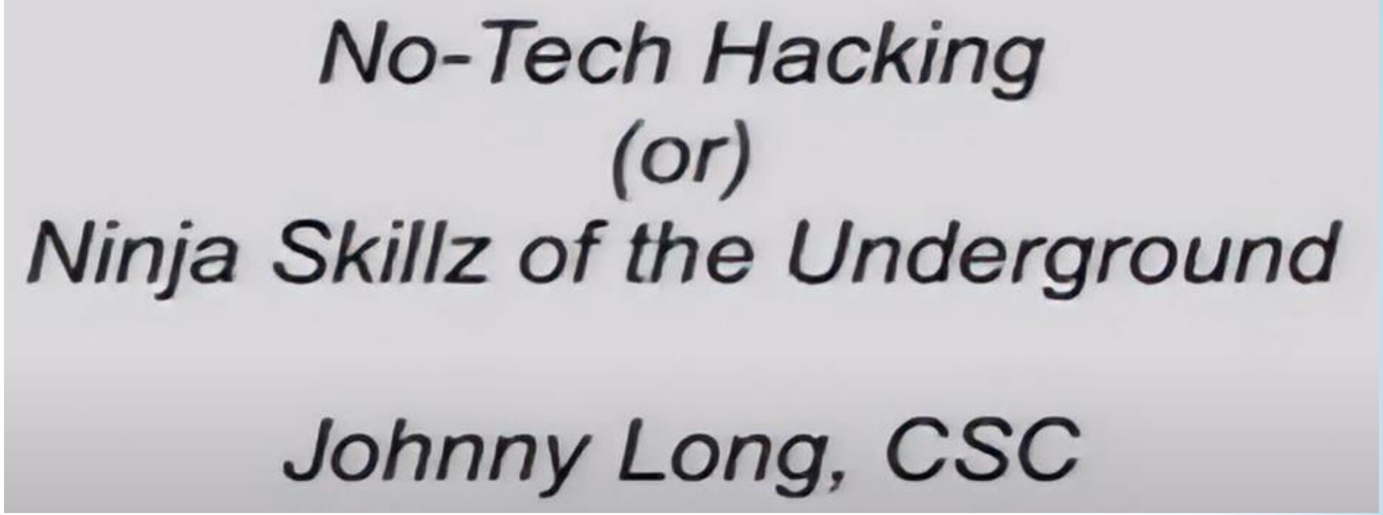
*Everything I Needed to Know About **Network** Security I Learned at the Tower of London*



New Recommendations

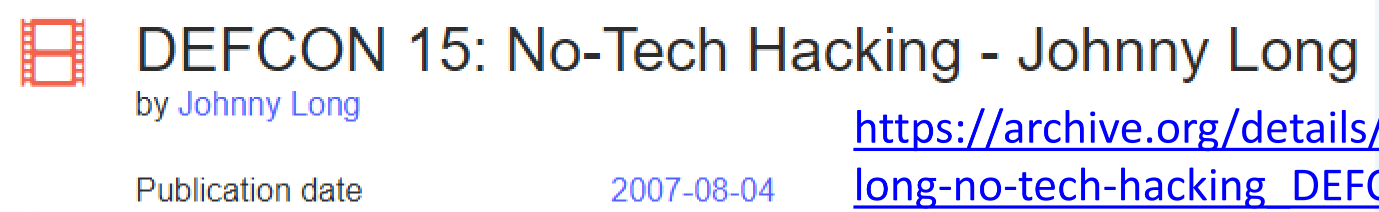
- Identify the "crown jewels"
- Encryption by default
- End-to-end encryption
- Terminate on the application, not the perimeter or the operating system
- Restrictive policy at every interface
- "bastion" between every system and its network
  - Hardware routers to change the policy to restrictive
  - Software to resist ex-filtration
- Know who you are talking to

OpSec & Social Engineering



No-Tech Hacking
(or)
Ninja Skillz of the Underground

Johnny Long, CSC

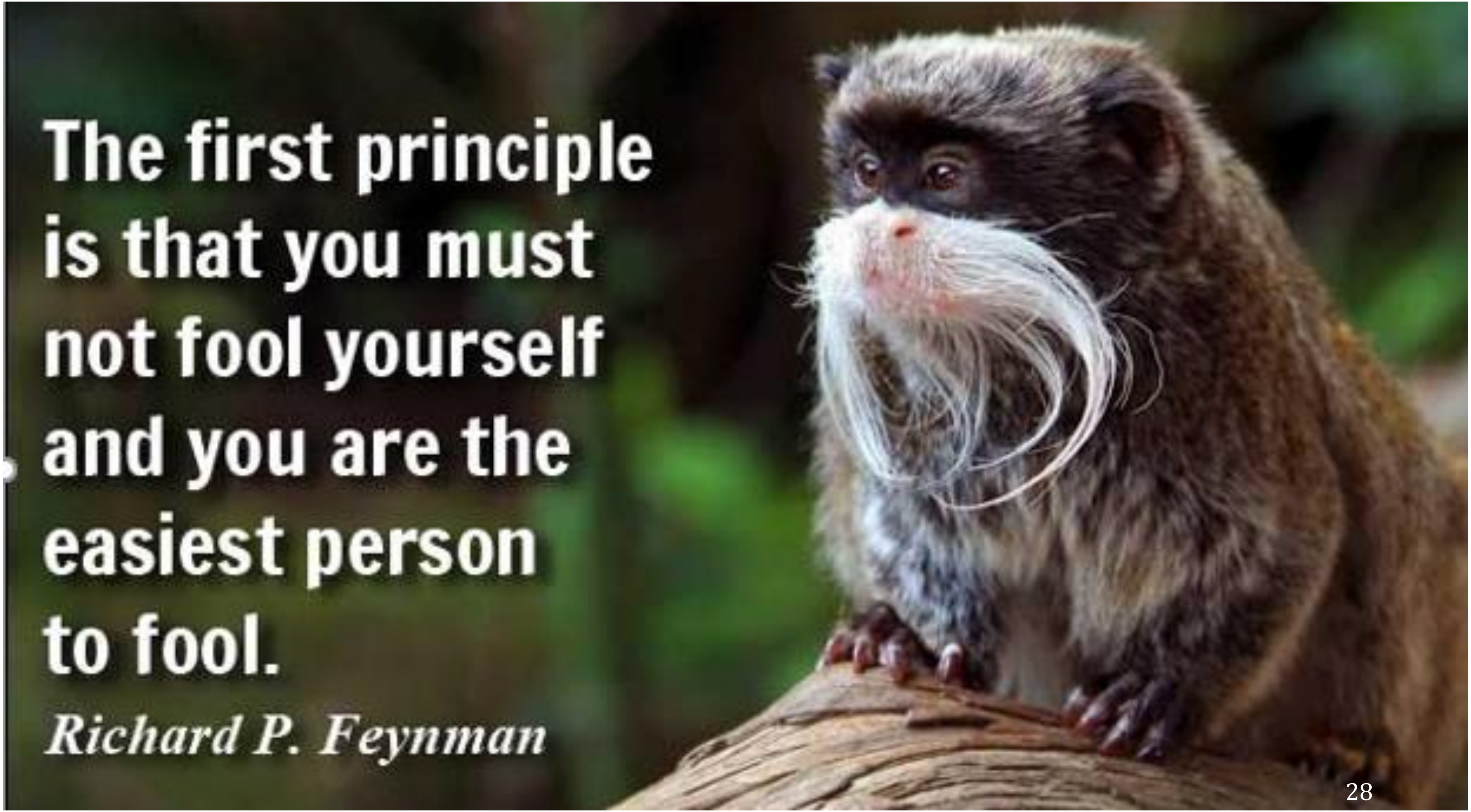


DEFCON 15: No-Tech Hacking - Johnny Long

by Johnny Long

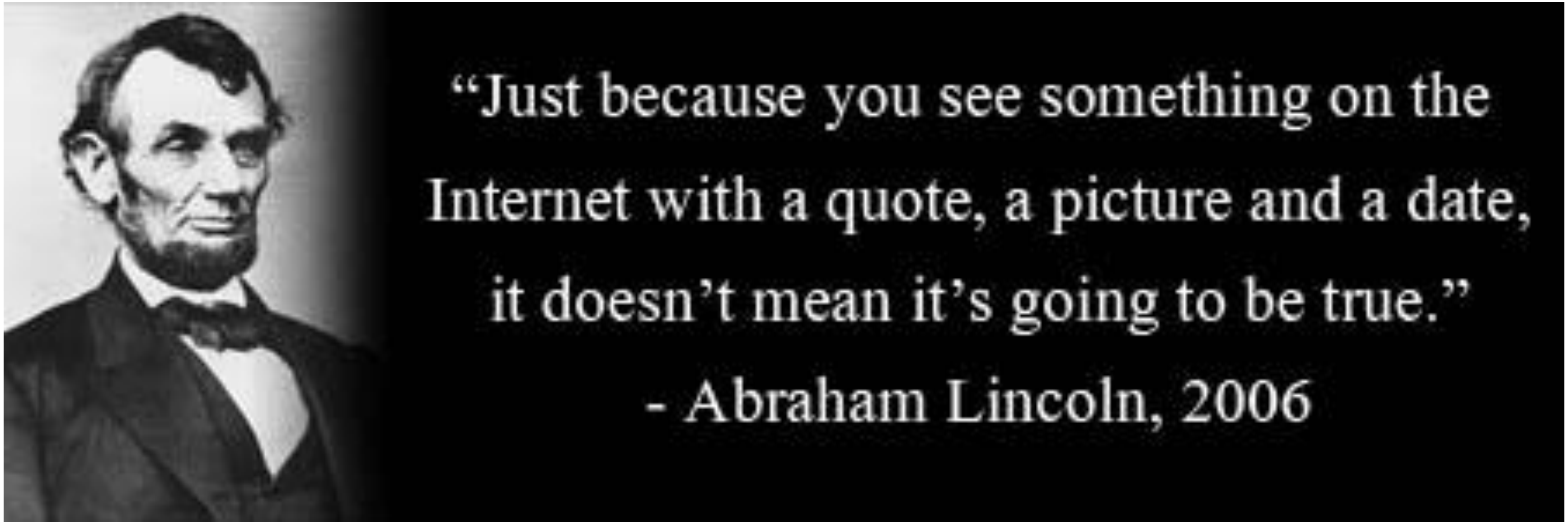
Publication date 2007-08-04

https://archive.org/details/johnny-long-no-tech-hacking_DEFCON15



The first principle is that you must not fool yourself and you are the easiest person to fool.

Richard P. Feynman



“Just because you see something on the Internet with a quote, a picture and a date, it doesn’t mean it’s going to be true.”

- Abraham Lincoln, 2006

Trust, AND Verify

aka Zero Trust

Ask the right questions

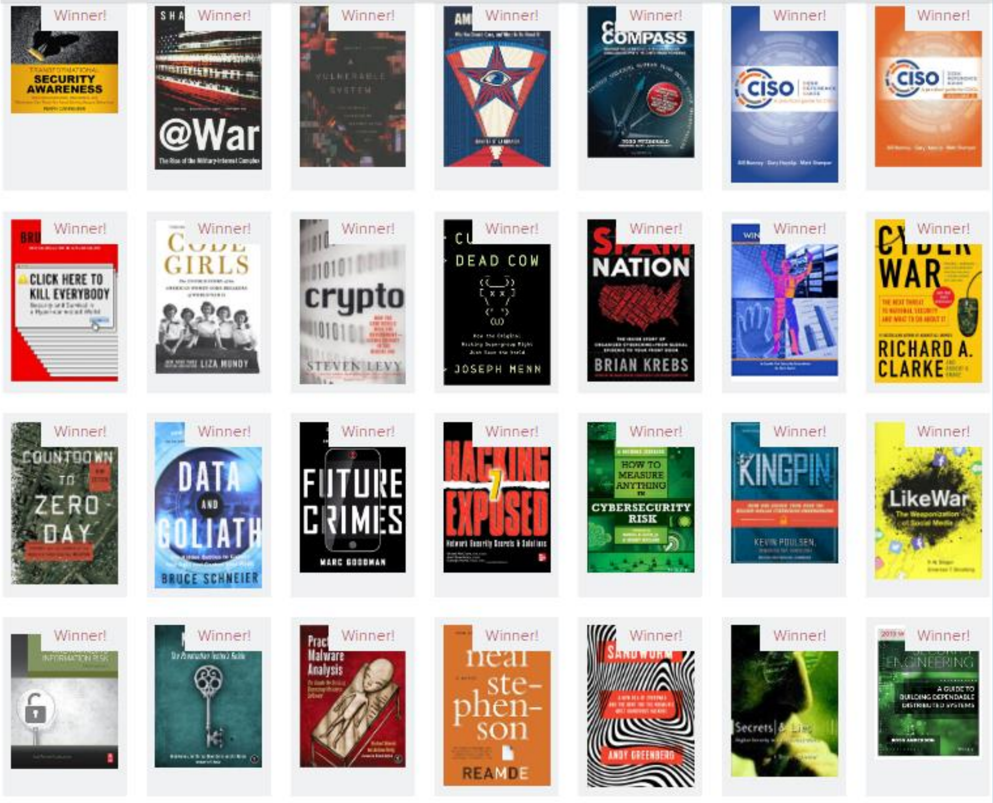
- What is the risk of a data breach? ☹
- How much risk is associated with an employee accidentally sharing client health details with the wrong party, worst case over the next year? ☺

Keep Learning

CYBERSECURITY CANON

[Cybersecurity Canon](https://icdt.osu.edu/cybercanon)

https://icdt.osu.edu/cybercanon



https://icdt.osu.edu/cybercanon/bookreviews

Solution = Kids

https://www.nebraskagencyber.com/

http://www.uscyberpatriot.org

AI Use in Cybersecurity

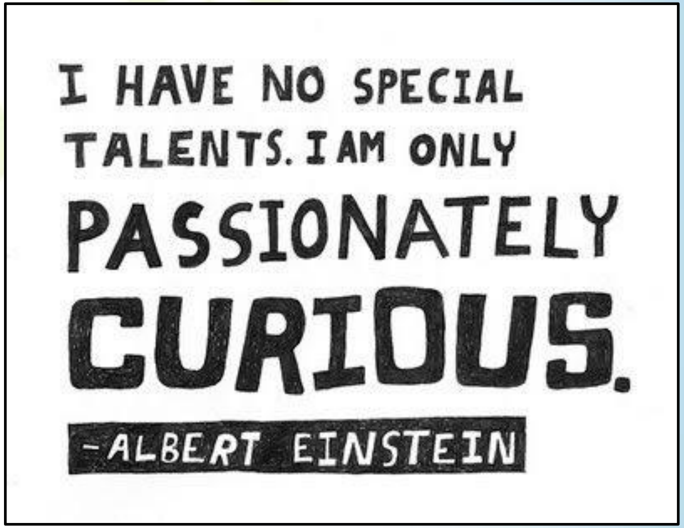
Prompt: Provide 5 ways AI can help cybersecurity and technical professionals reduce risks of malicious use of AI.

- ➢ Threat Intelligence and Prediction
- ➢ Automated Threat Detection and Response
- ➢ Phishing and Social Engineering Detection
- ➢ Proactive Vulnerability Management
- ➢ Endpoint Security with Behavioral Analysis

https://github.com/hackerron/AI-Cybersecurity

Apply what you learn (iow homework)

- ABC = Always Be Curious
- RTFM
- Share!
- If you see something,
  say something
- In the next week, review
  these slides and use 2-3 resources



I HAVE NO SPECIAL TALENTS. I AM ONLY PASSIONATELY CURIOUS.

– ALBERT EINSTEIN

Cybersecurity Groundhog Day

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Linktr.ee: https://linktr.ee/cyberron

Slides: https://github.com/hackerron/SecurityGHD/

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