

Rethinking Security

What Are We Doing Here?





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H7H4HEDZ







My Background

- 13 years with the Department of Defense
 - Certified Cryptanalyst
 - Designed Cryptosystems and Cryptologic Aids
 - Founding Member of Systems & Network Attack Center
- 16+ years as a PCI Qualified Security Assessor (QSA)
 - Lead Assessor/Assessment Team Member
 - Trusted Advisor
- 3 years with a Software Vendor
 - PCI Subject Matter Expert
 - Thought Leader
 - Security Strategist
- 27+ years of commercial professional services
 - Penetration Testing
 - Vulnerability Assessments
 - Security Architecture









QUALIFIED SECURITY
ASSESSOR







A Little About Me





NSA years

Cryptanalyst
Inventor
Innovator
InfoSec Analyst
Assessor
Hacker







The "Whiz Wheel" – Cryptographic Cipher Disc

ABCDEFGHIJKLMNOPQRSTUVWXYZ A Z Y X W V U T S R Q P O N M L K J I H G F E D C B A BYXWVUTSRQPONMLKJIHGFEDCBAZ CXWVUTSRQPONMLKJIHGFEDCBAZY DWVUTSRQPONMLKJIHGFEDCBAZYX E VUTSRQPONMLKJIHGFEDCBAZYXW F | U T S R Q P O N M L K J I H G F E D C B A Z Y X W V GITSRQPONMLKJIHGFEDCBAZYXWVU H|SRQPONMLKJIHGFEDCBAZYXWVUT RQPONMLKJIHGFEDCBAZYXWVUTS QPONMLKJIHGFEDCBAZYXWVUTSR K|PONMLKJIHGFEDCBAZYXWVUTSRQ L ONMLKJIHGFEDCBAZYXWVUTSRQP MNMLKJIHGFEDCBAZYXWVUTSRQPO NMLKJIHGFEDCBAZYXWVUTSRQPON OLKJIHGFEDCBAZYXWVUTSRQPONM P|KJIHGFEDCBAZYXWVUTSRQPONML Q|J|HGFEDCBAZYXWVUTSRQPONMLK RIHGFEDCBAZYXWVUTSRQPONMLKJ S H G F E D C B A Z Y X W V U T S R Q P O N M L K J I T | G F E D C B A Z Y X W V U T S R Q P O N M L K J I H U|FEDCBAZYXWVUTSRQPONMLKJIHG V E D C B A Z Y X W V U T S R Q P O N M L K J I H G F WIDCBAZYXWVUTSRQPONMLKJIHGFE XCBAZYXWVUTSRQPONMLKJIHGFED BAZYXWVUTSRQPONMLKJIHGFEDC ZAZYXWVUTSRQPONMLKJIHGFEDCB







The First Software-Based Encryption System

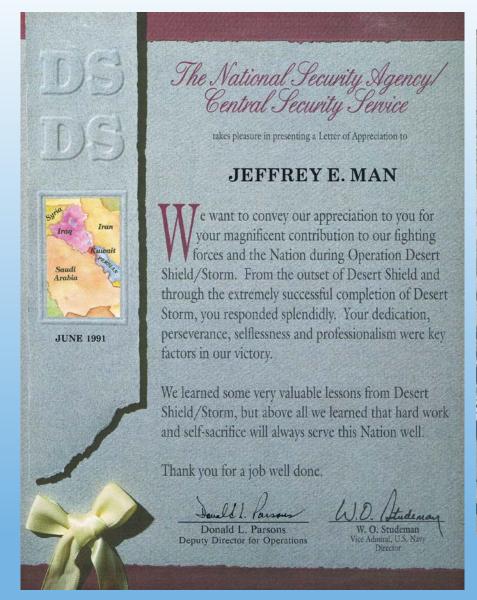




















DARK TERRITORY

THE SECRET HISTORY OF CYBER WAR

FRED KAPLAN

AUTHOR OF THE INSURGENTS

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formation, thus distorting his view of the battlefield and leading him to make bad decisions, which, in a real war, could have meant defeat.

The NSA had a similar group called the Red Team. It was part of the Information Assurance Directorate (formerly called the Information Security Directorate), the defensive side of the NSA, stationed in FANEX, the building out near Friendship Airport. During its most sensitive drills, the Red Team worked out of a chamber called The Pit, which was so secret that few people at NSA knew it existed, and even they couldn't enter without first passing through two combination-locked doors. In its workaday duties, the Red Team probed for vulnerabilities in new hardware or software that had been designed for the Defense Department, sometimes for the NSA itself. These systems had to clear a high bar to be deemed secure enough for government purchase and installation. The Red Team's job was to test that bar.

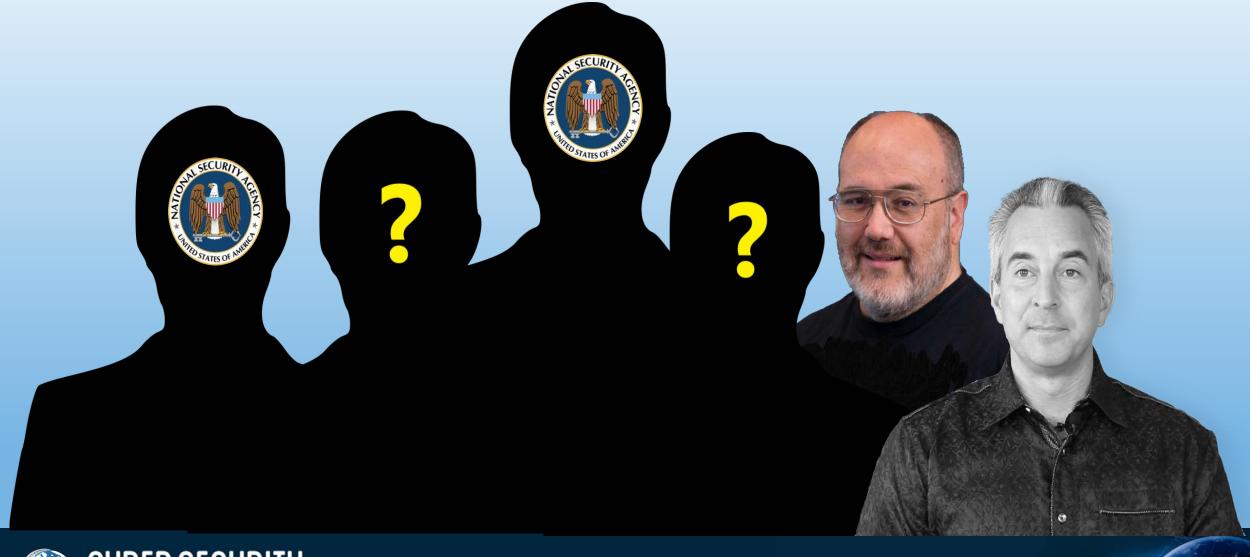
Minihan's idea was to use the NSA Red Team in the same way

ina Davanta Callilan Walnes





The Pit – was really a team of hackers







Twenty Years and counting...



QUALIFIED SECURITY ASSESSOR

































COVANCE







PHILLIPS







































































My First Lesson in Data Security





Ironically, it was 1984...

Summer Intern

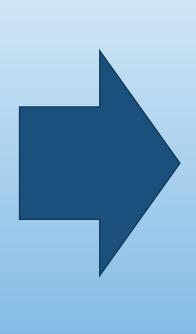
Naval Surface Weapons Center













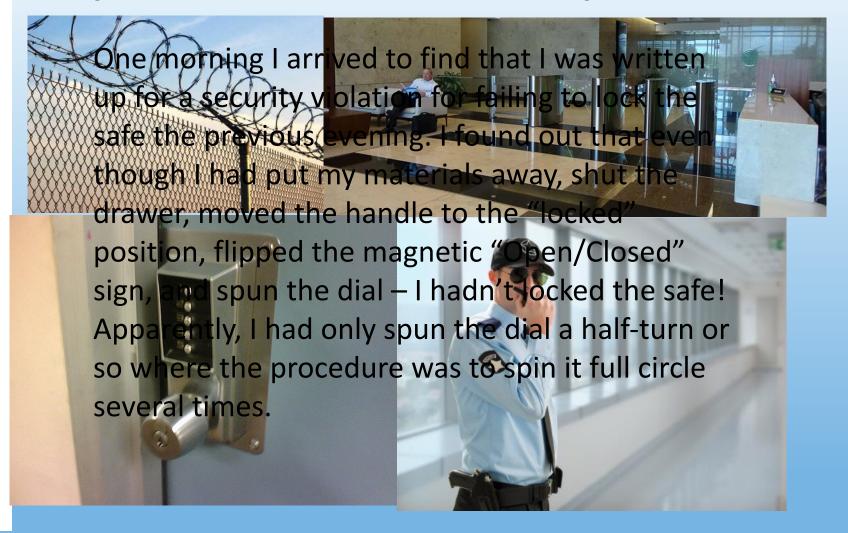
My summer assignment







My first lesson in Data Security











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Serious flaws leave WPA3 vulnerable to hacks that steal Wi-Fi passwords

Next, con standard was supposed to make password cracking a thing of the past. It won't.

CENTRE

SOFTWARE

SECURITY

DEVOPS

Security

Patch blues-day: Mic after some PCs are I secure (and unboota update

Sophos, Avast users left wa older OSes

By Richard Speed 11 Apr 2019 at 13:25

Facebook Stored Hundreds of Millions of User Passwords in Plain Text for Years

Hundreds of millions of Facebook users had their account passwords stored in plain text and searchable by thousands of Facebook employees - in some cases going back to 2012, KrebsOnSecurity has learned. Facebook says an ongoing investigation has so far found no indication that employees have abused access to this data.





reless hackers in your computer













DOORDASH



imperva

























Technology alone will never solve the problem...

Technology IS the problem





Humanity is technologically connected but institutionally divided





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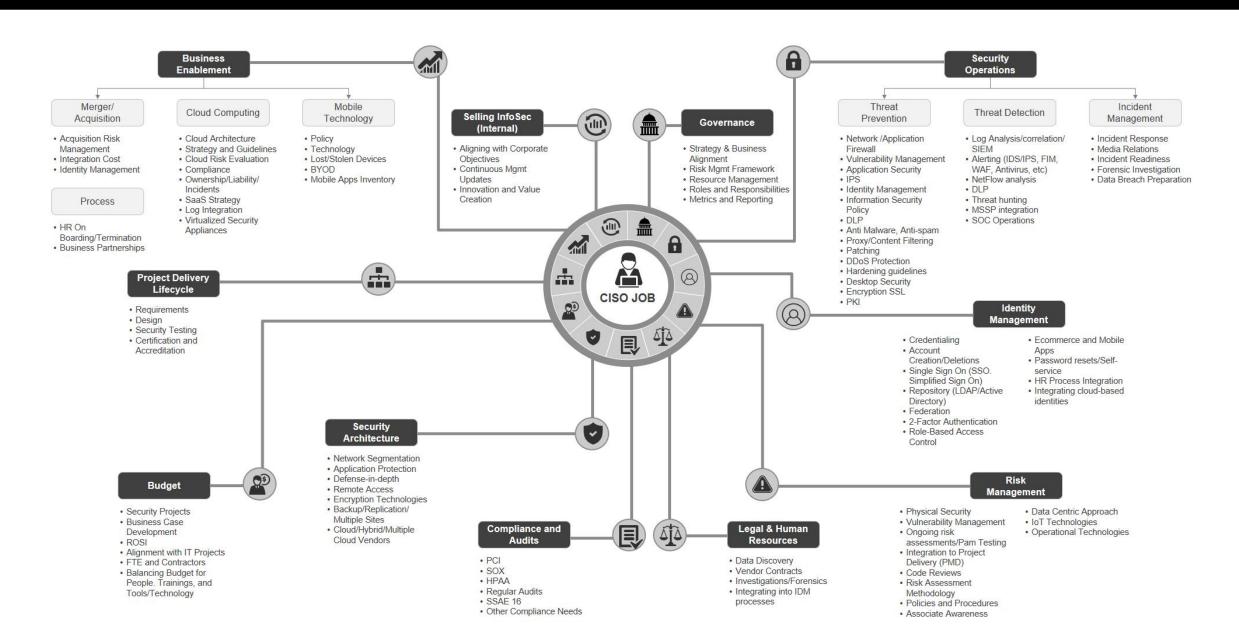
But You've Got This, Right?





CISO Mind Map





Sales: This product is stupid.

Service: Customers are stupid.

Finance: This system is stupid.

Development: Users are stupid.

Operations: Programmers are stupid.

Security: I wish I was stupid.

Sometimes We Are The Problem





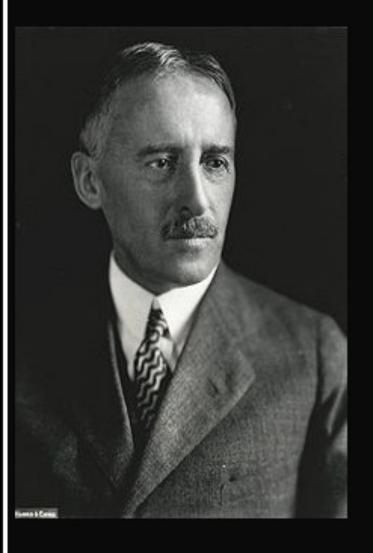
Rethinking Security....

Maybe we haven't learned all the lessons from the past









Gentlemen don't read each other's mail. (Henry L. Stimson)

izquotes.com





Data Security Triad

Confidentiality

- Stealing Data
 - Local (System, Application)
 - Network (Repositories)

Integrity

- Fraud
 - Altering legitimate data
 - Using previously stolen data
 - Identity theft

Availability

- · Denial of Service
- Ransomware

























The Cray X-MP (retired) Supercomputer





"What can be created by man can be broken by man."

NSA Chief Scientist



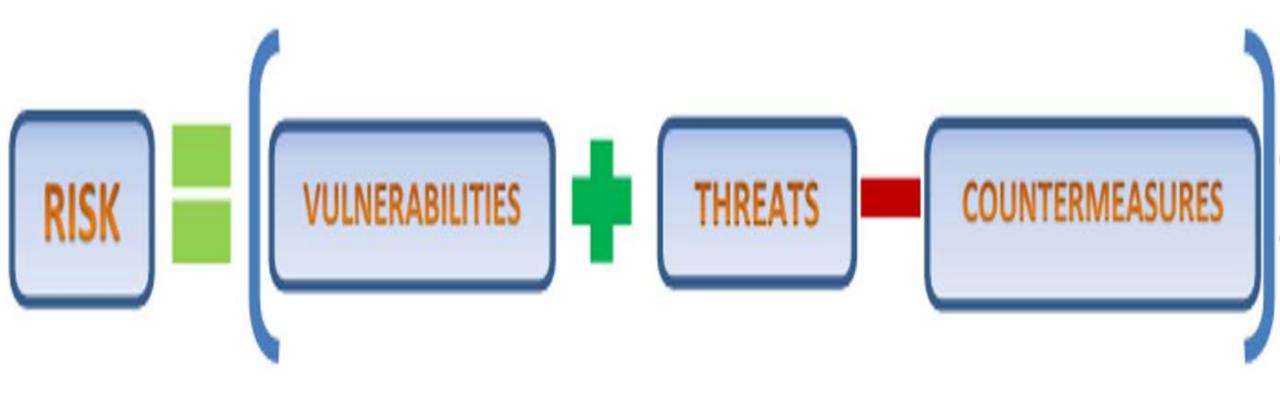


Here's my Pitch

Let's look back at the origins of what we're doing the basic risk equation







The Classic Risk Equation

(notice security isn't even mentioned here)





Risk Components

Vulnerabilities (weaknesses)

- Bugs/Features
- Misconfigurations
- Processes
- People

Threats (badguys)

- Data thieves
- Fraudsters
- Nation States

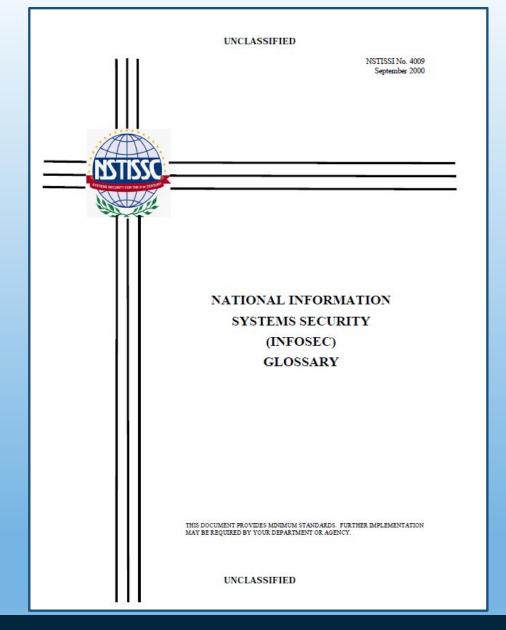
Countermeasures (mitigation)

- Detection
- Response
- Recovery

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Everything you ever wanted to know about InfoSec...and it's online these days!





RISK

Possibility that a particular threat will adversely impact an information system by exploiting a particular vulnerability.

- National Information Systems Security (INFOSEC) Glossary





THREAT

Any circumstance or event with the potential to adversely impact an information system through unauthorized access, destruction, disclosure, modification of data, and/or denial of service.

National Information Systems Security (INFOSEC) Glossary





"Threat Intelligence" c. 1998

Threats

Disgruntled, Former and Temporary Employees

Hackers

Industrial Espionage

The Media

Criminal Activity

Natural Events and Accidents

Blunders, Errors, Omissions

Terrorists

National Intelligence

Motives

Access to Data

Disrupt Operations

Steal \$\$, Products, or Services

Obtain Free Use of Resources

Visibility, Publicity, Chaos

Embarrass Target, Retribution

Thrill, Challenge

Competitive Advantage





VULNERABILITY

Weakness in an information system, system security procedures, internal controls, or implementation that could be exploited.

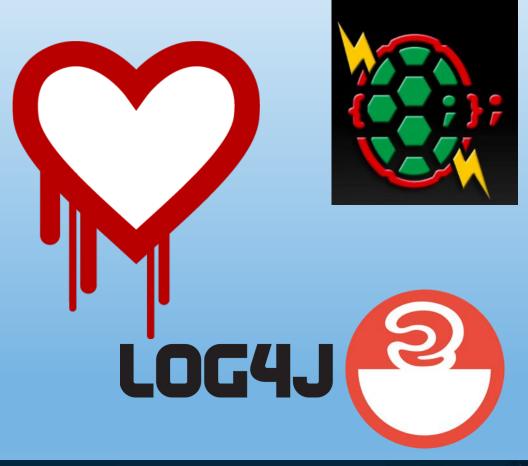
- National Information Systems Security (INFOSEC) Glossary





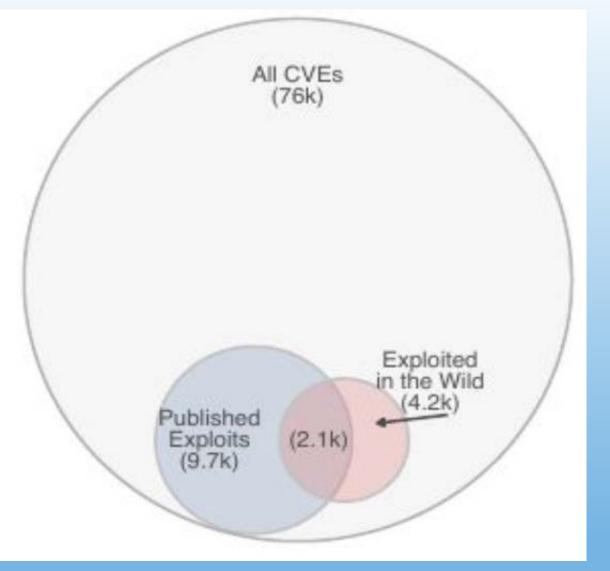
Vulnerabilities – they're not going away (they're just getting logos)











"A recent study found that only 5.5% of security vulnerabilities discovered by researchers were actually ever used by hackers." 1

¹Why hackers ignore most security flaws, Joe Uchill, AXIOS, June 13, 2019





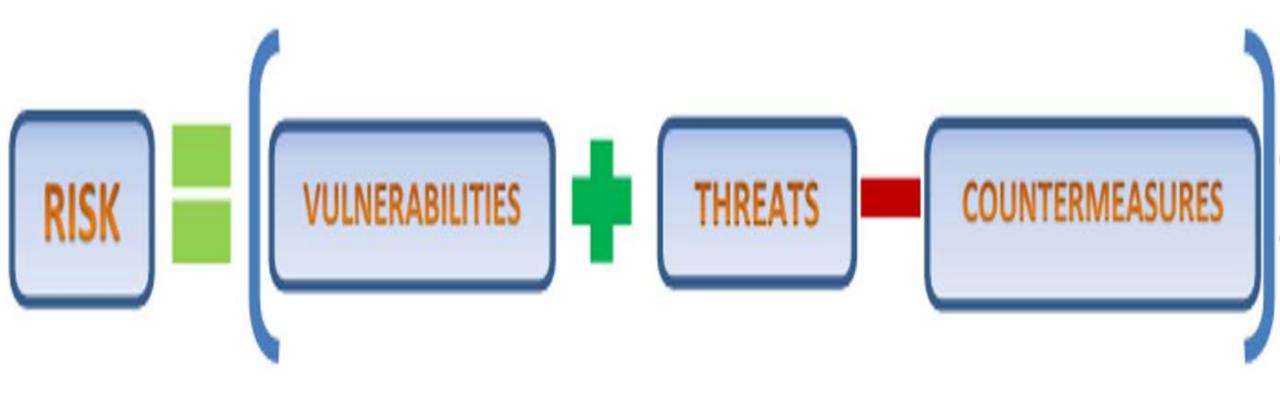
COUNTERMEASURE

Action, device, procedure, technique, or other measure that reduces the vulnerability of an information system.

National Information Systems Security (INFOSEC) Glossary







The Classic Risk Equation

(notice security isn't even mentioned here)





So what is Security?





Risk-Based Security Model







What are we doing here?

What do you do? Where does it fit in to the Risk Equation? And is it really security?









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#cybersecuritysummit #css13



Want to learn more?







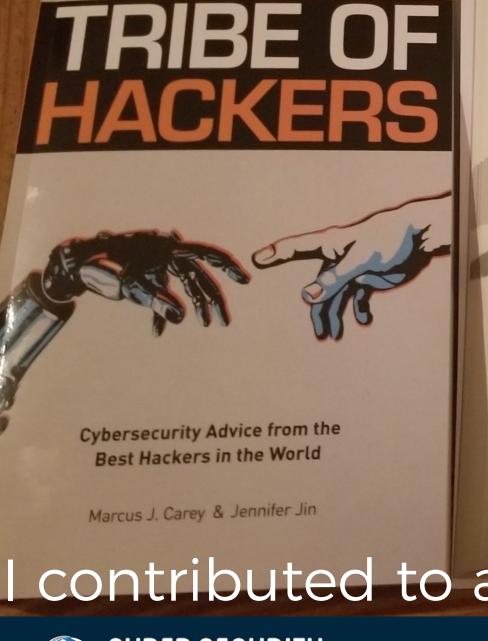


maliciouslife

BY CYBEREASON

How the Internet Changed the NSA





Jeffrey Man is a respected information security expert, advised to the security podcast Security Weekly. He has one to all aspects of computer, network, and information security roles within the DoD as well as enterprises, is a former PCI QSA, and was part of the instance.

Website: securityweaks

If I may be philosophical for a moment, I would suggest that the break cybersecurity is the notion of security in and of itself—that is a walk achieved, or to which one can be elevated. As a more practical more sequently as daunting, I would say the biggest myth in cybersecurity begins and ends with technology. (we find the cybersecurity begins and ends with technology.)

While technology is here to stay, and is certainly an integral part of cybersecurity. I believe there are fundamentals to understanding the base call "cybersecurity" that are too often misunderstood, because the understanding the base call and application begins with a presumption about the technology. Here should be contained the information of protecting your information assets too often reasonable. The notion of protecting your information assets too often reasonable the information technologies that are employed within the enterprise on believe the information assets are far and away the information and take the processed, transmitted, and stored using the information technologies are sometimes of the information technologies.

What is one of the biggest bang-for-the-buck actions that an organization to take to improve their cybersecurity posture?

Taking any steps to educate the employee population about the nature of the business—and what is considered valuable by the company in terms of its information assets—and fostering an environment where every employee understands, embraces, and buys into the notion that what they do for don't dol impacts the overall success of cybersecurity efforts. I'm not talking about compulsory viewing of an annual 30-minute security awareness video. I'm talking about systemic, core-value, company identity-type of practices that change behaviors of employees—rewarding right behaviors and doing the right thing right than turning a blind-eye or creating a work culture where bad practices, or even breaking the rules, is rewarded or expected. How is this a "biggest bang-for-the-buck" activity? I believe it is the only thing left to do that hasn't already been done or really invested in. There's always going to be IT and IS spending, and God help the people who have to try and sort all that out in terms of the right level and toos of investment. But no amount of technology spending, ultimately, will take the place of employees understanding the goals of cybersecurity and doing their path facilitate it in their organization.

NO AMOUNT OF TECHNOLOGY
SPENDING WILL TAKE THE PLACE
OF EMPLOYEES UNDERSTANDING
THE GOALS OF CYBERSECURITY AND
DOING THEIR PART TO FACILITATE IT
IN THEIR ORGANIZATION.

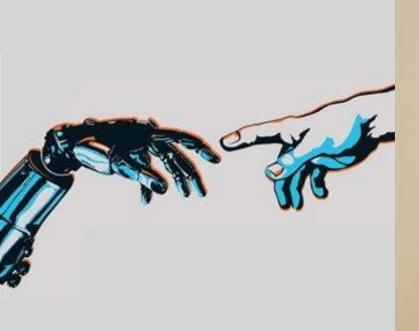
I contributed to a book - tribeofhackers.com



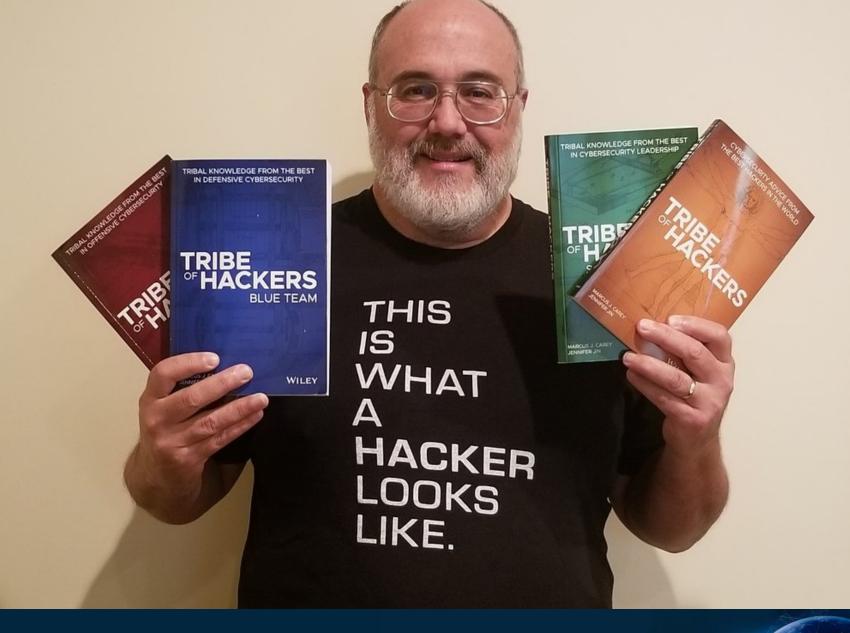
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In fact, I'm in all 4 Tribe of Hackers books







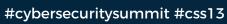




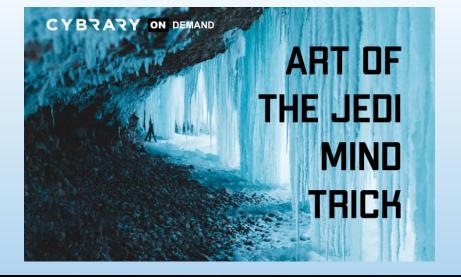


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Payment Card Industry Data Security Standard (PCI DSS): Practitioner Course

This course highlights the changes implemented in the PCI standard version 4.0. Join Jeff Man as we work through the more specific points of the PCI, how to work with a Qualified Security Assessor (QSA) and how Self-Assessment Questionnaires (SAQ's) can be used to help build compliance and improve overall security for your business and customers.

ACTIVITY TYPE

TIME

DIFFICULTY

ENROLLMENTS

Course

4 hours 4 minutes ①

Intermediate

208

Payment Card Industry Data Security Standard (PCI DSS): Primer Course

This course focuses on the fundamentals of the Payment Card Industry Data Security Standard (PCI DSS) and how assessing the security programs of merchants and service providers protects payment data from loss or compromise. The course also looks at changes and updates found in the latest version of PCI DSS (v4.0) released in March 2022.

ACTIVITY TYPE

TIME

DIFFICULTY

ENROLLMENTS

Course

3 hours 20 minutes ①

Intermediate

354



I've taught several virtual online courses

















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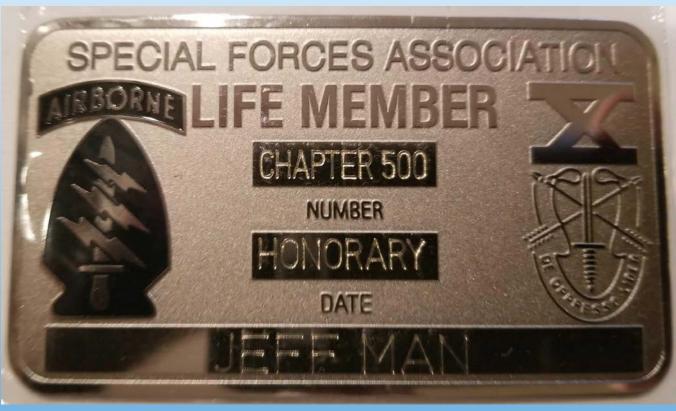


I'm in a Card Game: Phreaker.life Anhackronisms











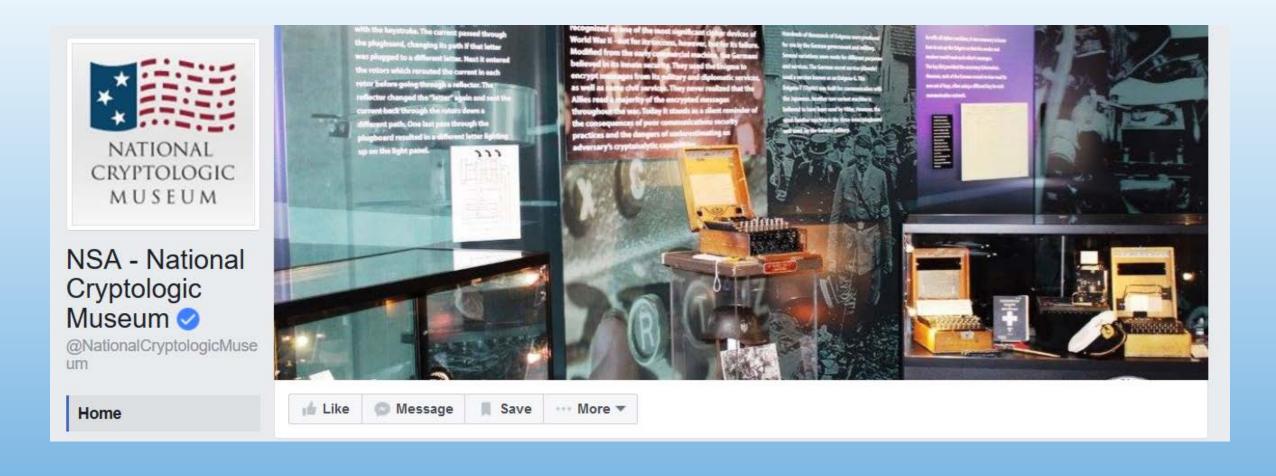
A former "customer"

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#cybersecuritysummit #css13





https://www.nsa.gov/about/cryptologic-heritage/museum/





