

ORAL PRESENTATION

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CONTENTS

- Hack to the Basics (Common Ground)
- Bugs Galore (Destabilizing Moment)
- Computing a Solution (Solutions)
- The C++onsequences (Consequences)
- Annotated Bibliography

HACK TO THE BASICS

Hacking explained, bit by bit

ETHICAL HACKING

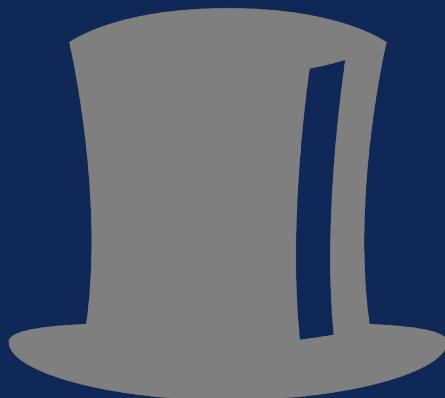


LIKE A BAD WESTERN MOVIE

White-Hat Hackers



Gray-Hat Hackers



Black-Hat Hackers



The Evilness Scale

COMPUTER FRAUD AND ABUSE ACT

- Enacted in 1986
- Ronald Reagan and WarGames
- Prohibits intentionally accessing a protected computer without authorization
- Last amended in 2008
- Vague and broad
- History is not kind to those who are prosecuted under this statute

TABLE I. SUMMARY OF CFAA PENALTIES

Offense	Section	Sentence*
Obtaining National Security Information	(a)(1)	10 (20) years
Accessing a Computer and Obtaining Information	(a)(2)	1 or 5 (10)
Trespassing in a Government Computer	(a)(3)	1 (10)
Accessing a Computer to Defraud & Obtain Value	(a)(4)	5 (10)
Intentionally Damaging by Knowing Transmission	(a)(5)(A)	1 or 10 (20)
Recklessly Damaging by Intentional Access	(a)(5)(B)	1 or 5 (20)
Negligently Causing Damage & Loss by Intentional Access	(a)(5)(C)	1 (10)
Trafficking in Passwords	(a)(6)	1 (10)
Extortion Involving Computers	(a)(7)	5 (10)

* The maximum prison sentences for second convictions are noted in parentheses.

Harsh Penalties

**“WITH HARSH PENALTY SCHEMES AND
MALLEABLE PROVISIONS, IT HAS BECOME A
TOOL RIPE FOR ABUSE AND USE AGAINST
NEARLY EVERY ASPECT OF COMPUTER
ACTIVITY”**

- NACDL

BUGS GALORE

A big bug that needs to be squashed

9

HACKERS: A 1995 FILM



WHAT CAN WE DERIVE?

The Connotations

- Negative
- Dangerous
- Certain stereotypes
- Only reserved for those that are knowledgeable
- Only good or bad, instead of a more nuanced take

Obvious Inaccuracies

- No actual hacking is shown
- What's even going on the screens???
- Real life hacking is nothing like this

Hard to Follow

- Technical jargon
- Nonsensical
- Played up for the TV screen
- Not really meant to be understood

Unfortunately, too much media even in the modern day have these same connotations!

A LOT OF TALK, BUT NO ACTION

RESEARCH QUESTION

What can we modify in present-day legislation regarding cyber activities to improve American society's connotations on hacking?

INITIALIZING KEY VARIABLES



Location

- United States



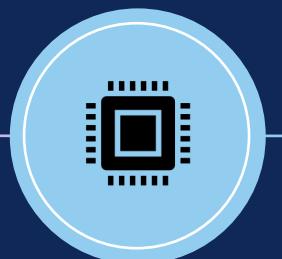
Laws

- Cases/Laws



Society

- American society



Effects

- Pros/cons



Myself

- Motivations
for this topic

COMPUTING A SOLUTION

Is there a better and more efficient algorithm to use here?

ACCESS DENIED

- From 18 USC 1030: Fraud and related activity in connection with computers...
- A defendant can be charged under the CFAA if they intentionally access a computer without authorization or 'exceeds' authorized access and thereby obtains...
- Information contained in a financial record, in a government record or any *PROTECTED* computer

CHANGING THE SYNTAX

- Present Day

A protected computer is...

- A computer used by a financial institution of the United States

- Used in or affecting interstate or foreign commerce or communication

- Proposed Change

A protected computer is...

- A computer that is used for federal purposes

- A computer that is used for non-financial gain

The goal of this proposed change is to force businesses to ramp up internet security efforts from the start rather than dealing with consequences later

GIT-TING BETTER

No Punishments

- There should be no punishments to those that expose security vulnerabilities and report to the affected parties (more liberal safe harbor policies)

Tailored to the people

- The goals of this policy should be redesigned to protect the people, NOT the United States government

Less Vague

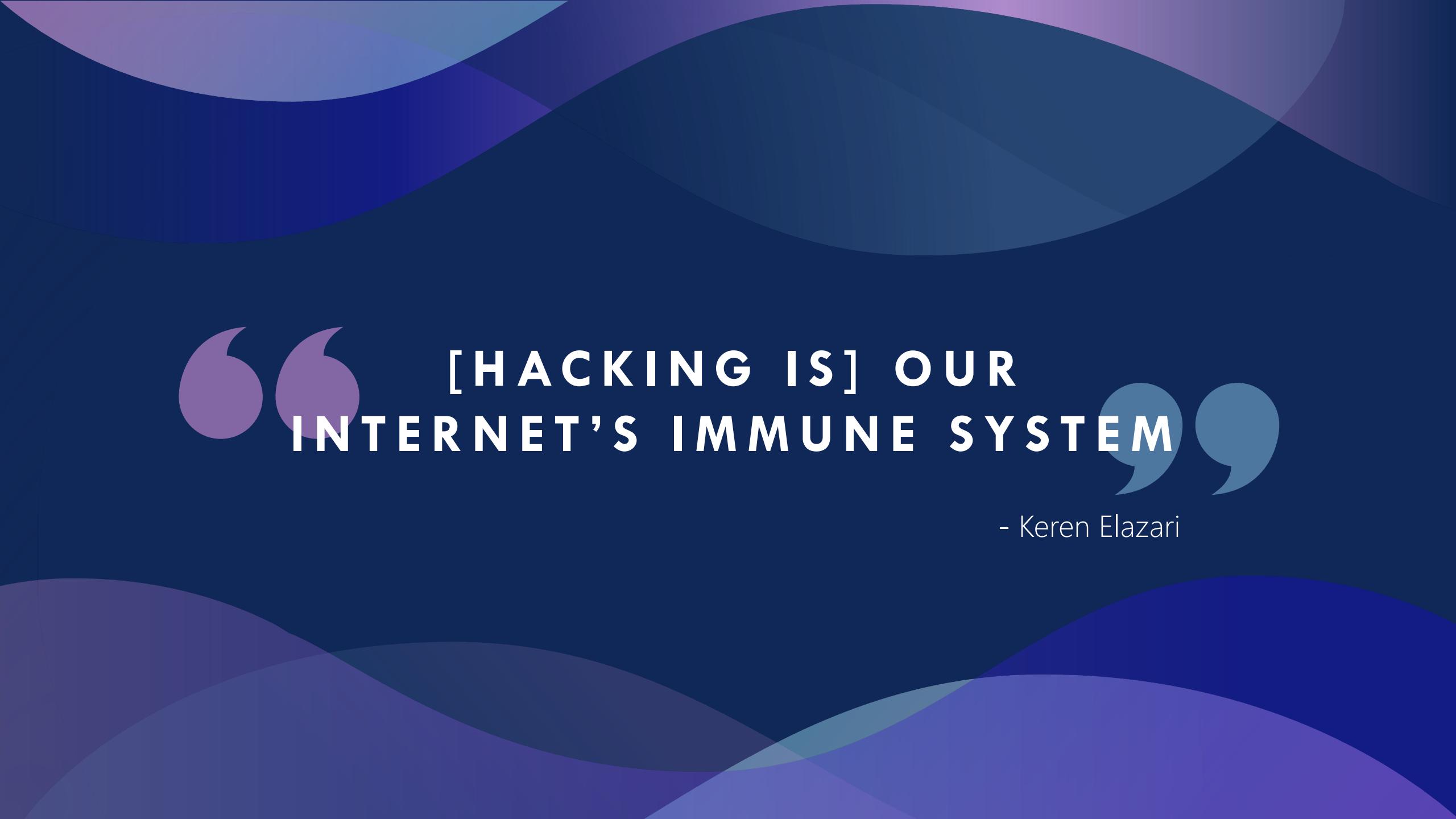
- Many of the provisions in the CFAA are up to interpretation
- It is imperative to be specific about what is allowed and what is not

EXCEEDING UNAUTHORIZED ACCESS

- The term "exceeds unauthorized access" means to access a computer with authorization and to use such access to obtain or alter information in the computer that the accessor is not entitled to obtain or alter
- This varies from entity to entity where some may not explicitly state what is unauthorized
- Can be difficult to prove or defend against
- "Damages" from a case can be subjective
- Can result in vulnerabilities found too late and by a malicious party rather than an insider

THE C++ONSEQUENCES

What are the consequences if we continue with archaic legislation? What happens to our internet security?



“ [HACKING IS] OUR
INTERNET’S IMMUNE SYSTEM ”

- Keren Elazari

RETURN ON OUR INVESTMENT

Security	Monetary	Understanding	Prevention	Justice
<ul style="list-style-type: none">- Better tested web applications lead to better general web security- Better policies suited for today's technology	<ul style="list-style-type: none">- Large data breaches have cost businesses a lot of money- Create jobs for those going into information security	<ul style="list-style-type: none">- Educate the broader population on what hacking is, and the benefits and risks- More industry professionals	<ul style="list-style-type: none">- Mitigate the potential negative effects of hacking- An ounce of prevention is better than a pound of cure	<ul style="list-style-type: none">- Punishments for those found guilty under the CFAA face extremely harsh sentences- Aaron Swartz and many others like him

DEF OUR(STAKEHOLDERS):



Government

National Security Risks



Businesses

Business Implications



Society

Collective Internet Security



Individuals

Sensitive Personal Information

HACKING IN TV VS HACKING IRL



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THANK YOU

Any Questions?