Codacy

AI and Cyber Security

Business Survival in the Age of Accelerating Cyber Threats

April 2024

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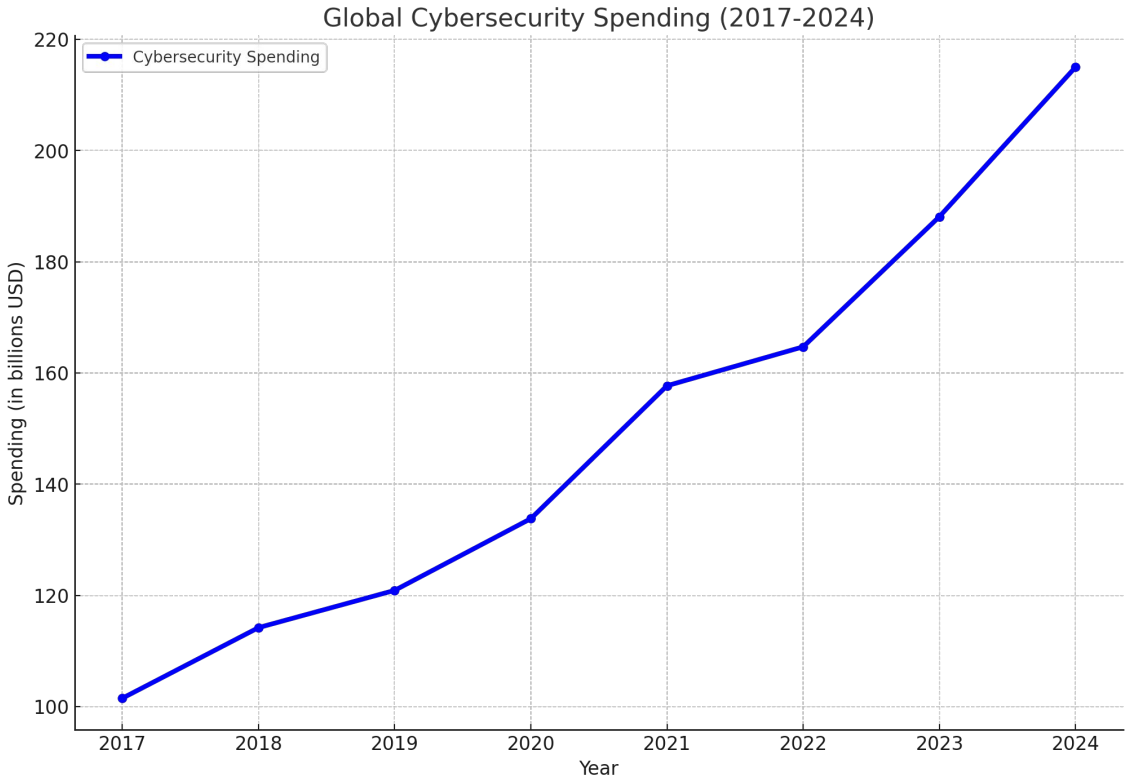
Co-founder & CEO of Codacy

The world cares about Cyber Security

$215b

Total world spending in Cybersecurity according to Gartner.

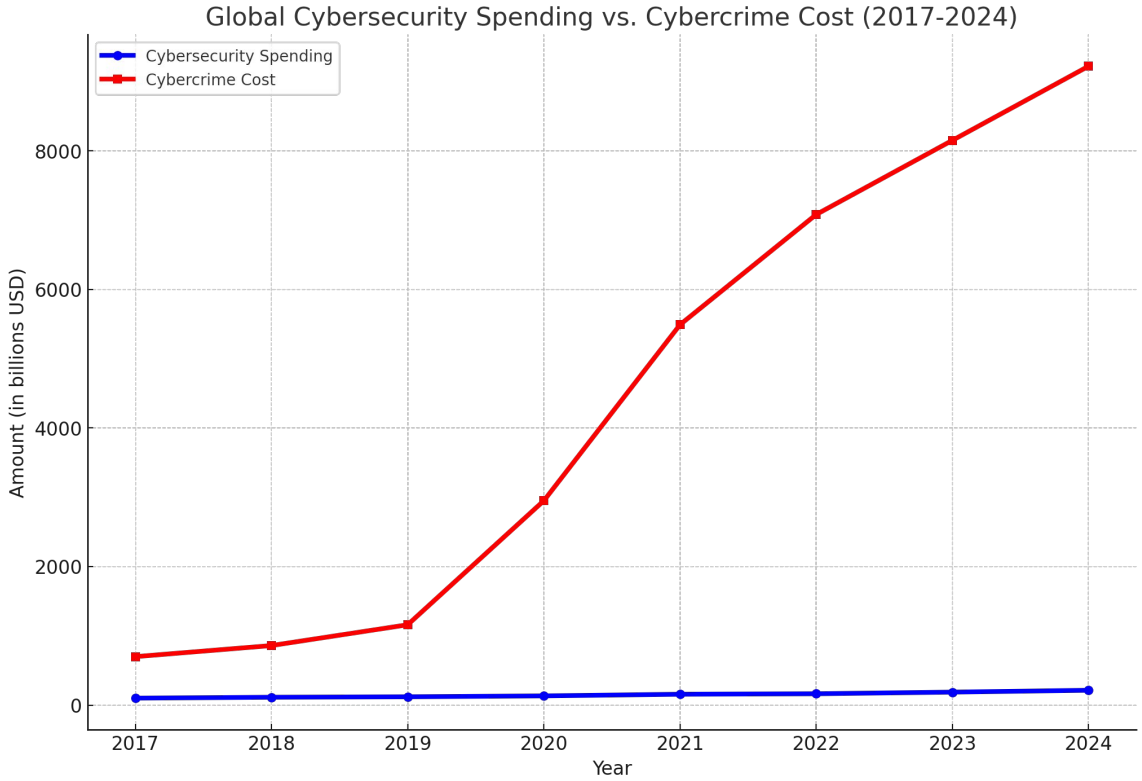
This investment has been increasing over the years.



This investment has been increasing over the years.

But it’s eclipsed by the cost of the impact.

Cybercrime is growing faster than cybersecurity spending by about 39.36% annually.



Today:

1.

Why costs are going to accelerate

2.

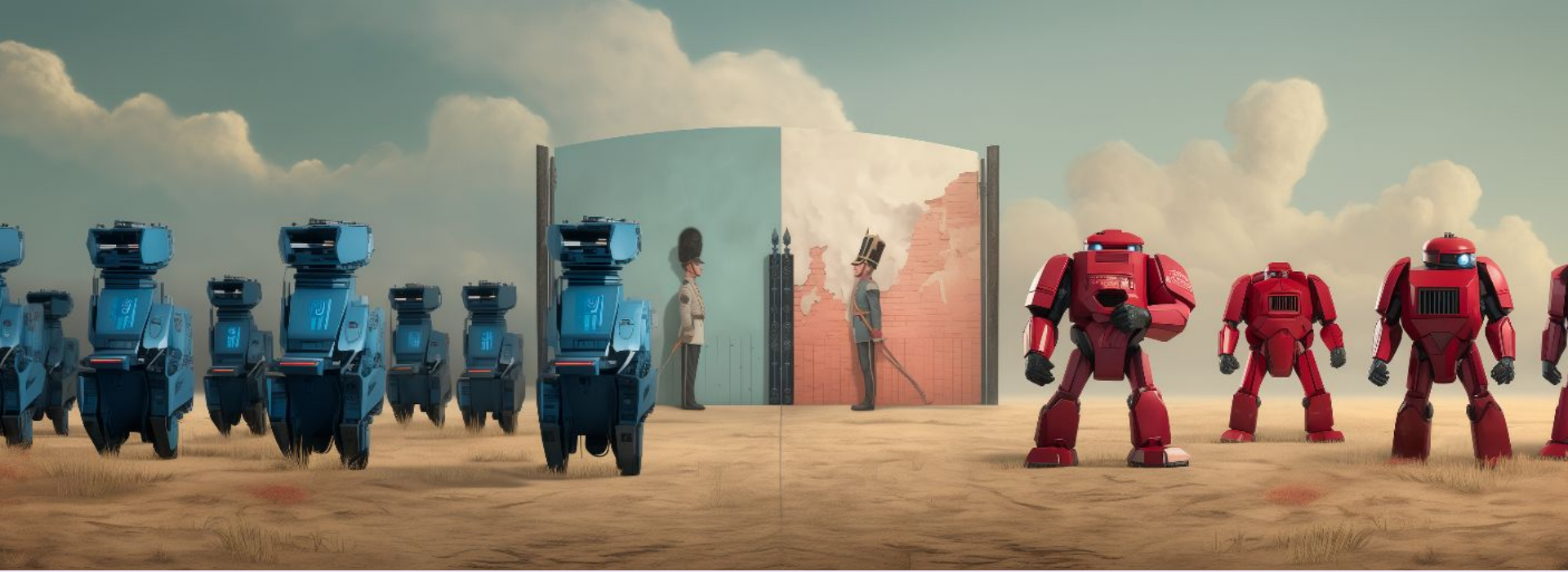
Some companies will suffer more than others

Part 1

Accelerating costs

Cybersecurity and cybercrime is always a standoff

That is limited by humans and some automation



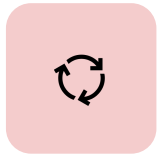
AI scales that conflict.

AI is changing offensive / defensive security

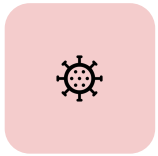
Offensive

Phishing

Ransomware



Supply Chain



Malware

Code Injection Attacks

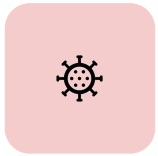
DDoS

Offensive

Phishing

Ransomware

Supply Chain



Malware

Code Injection Attacks

DDoS

Media Contact:
MediaRelations@fcc.gov

For Immediate Release

FCC MAKES AI-GENERATED VOICES IN ROBOCALLS ILLEGAL

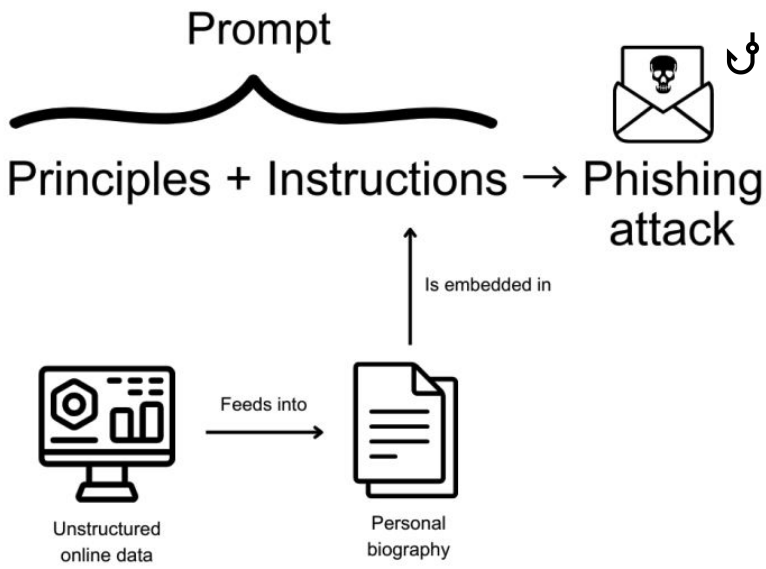
State AGs Will Now Have New Tools to Go After Voice Cloning Scams

Higher conversion rate of success for attackers

On a **small scale**, phishing isn't very successful, but on a large scale, the one or two victims that fall for the scheme make it worth it.

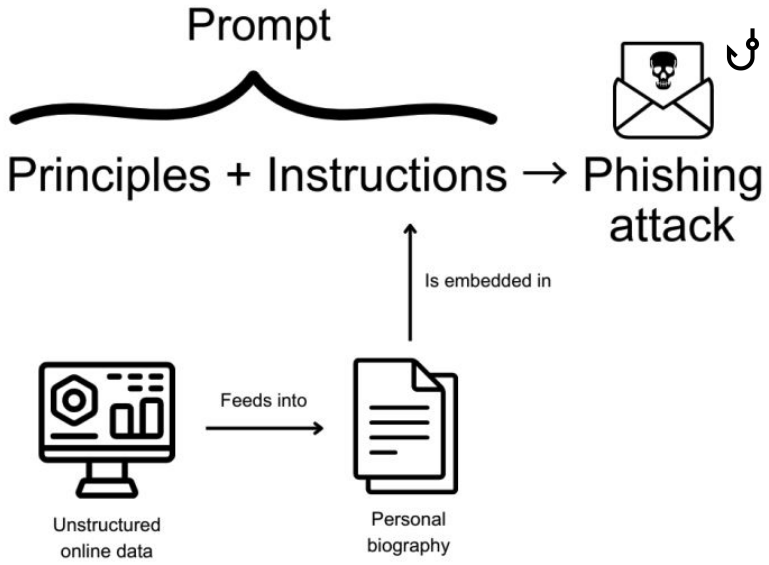
AI enables **spear phishing** attacks at scale.

Phishing



"Spear Phishing With Large Language Models", J Hazell 2023

Every hour, Multiple times



"Spear Phishing With Large Language Models", J Hazell 2023

Online Identification is fragile

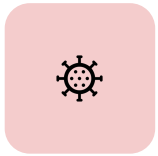
*“Just from analyzing a **small clip from an online video,** scammers can **replicate a voice** to a chilling degree of accuracy and use it to call your loved ones pretending to be you.“*

Offensive

Phishing

Ransomware

Supply Chain

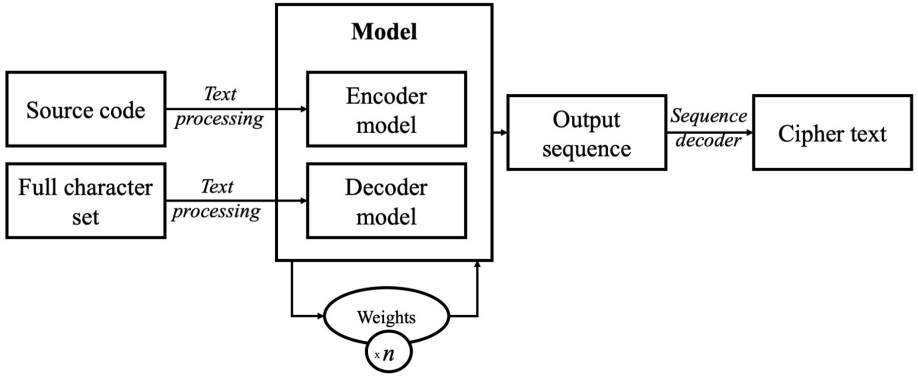


Malware

Code Injection Attacks

DDoS

GAN to obfuscate Malware

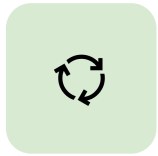


S. Datta. 2020. DeepObfusCode: Source Code Obfuscation Through Sequence-to-Sequence Networks. In Advances in Intelligent Systems and Computing

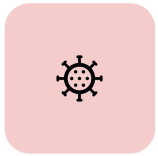
Offensive

Phishing

Ransomware



Supply Chain



Malware

Code Injection Attacks

DDoS

Reverse Engineering and Vulnerability detection is enabled by AI

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Information from Mirsky, Yisroel, et al. "The threat of offensive ai to organizations." *Computers & Security* 124 (2023)

Any vulnerability in software will be more likely to be found

Thoughts

AI will enable automation of human behavior in cybercrime. Targets that would otherwise be economically unreasonable will become viable and profitable

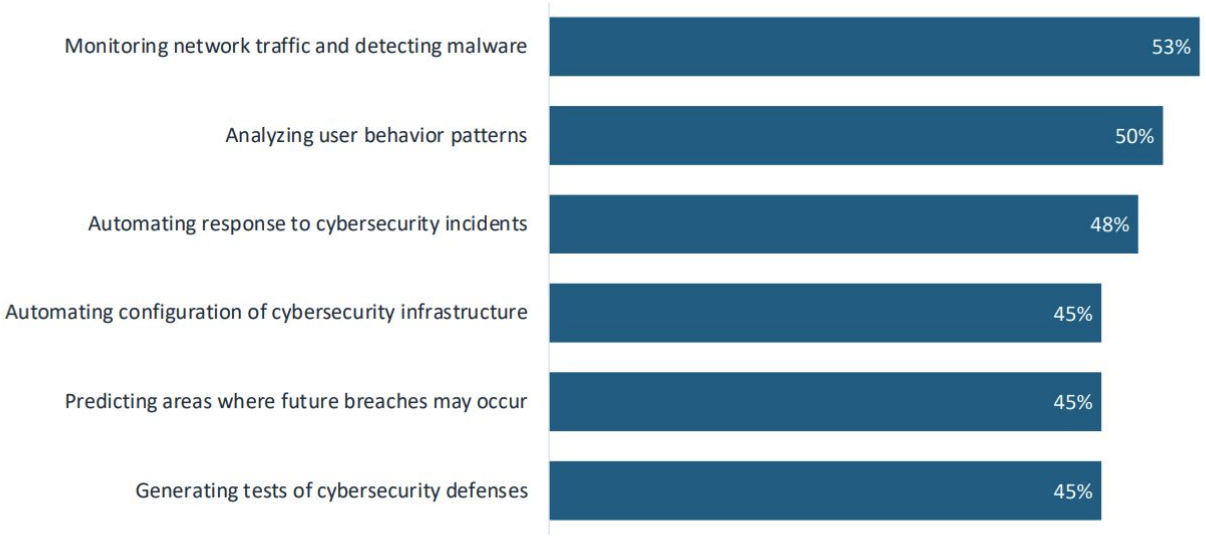
Lowered bar for cybercrime → more attackers

AI creates uncertainty in online human protocols.

We'll have **AIs battling AIs** where we control them. We'll live in digital walled gardens

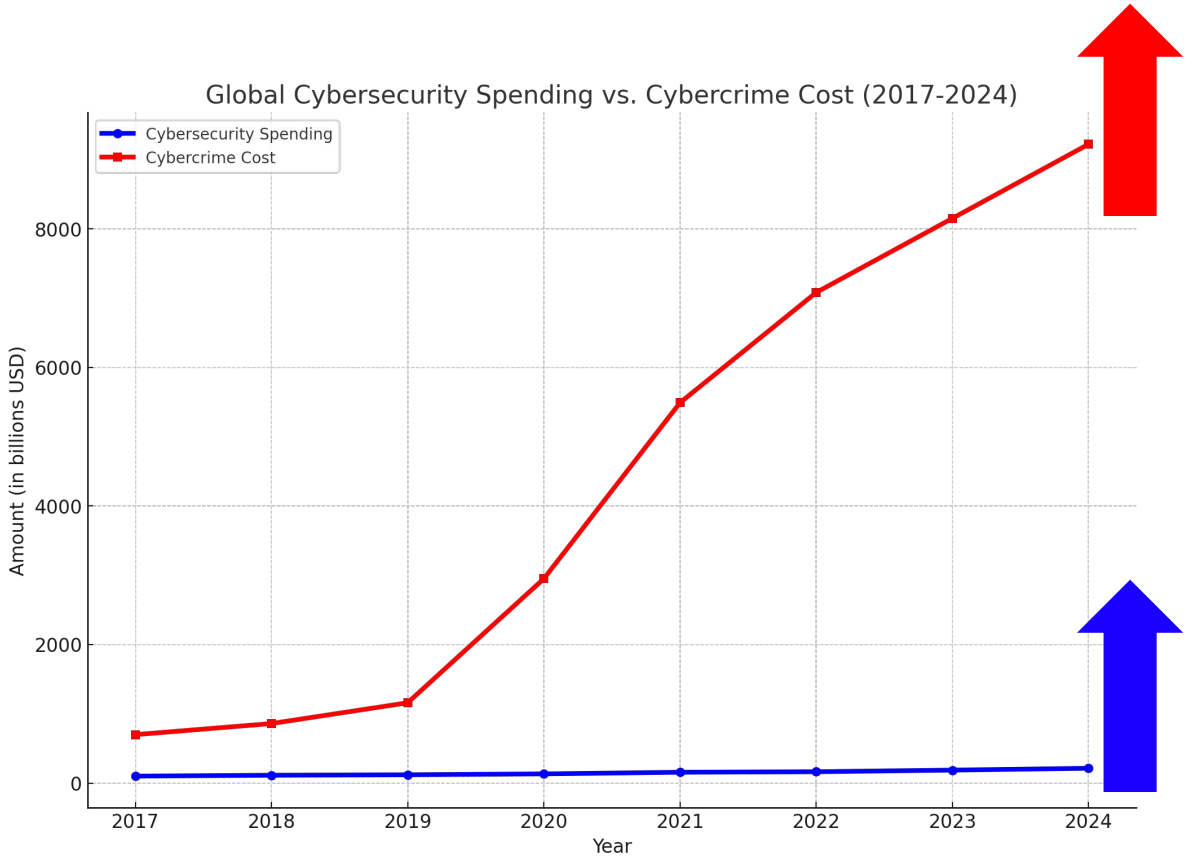
AI is changing offensive / defensive security

Potential Uses of AI in Cybersecurity



Source: CompTIA 2024 State of Cybersecurity | n=511 U.S. technical and business professionals

AI brings cybersecurity arms race.



Part 2

SMBs will suffer more

43%

attacks are aimed at SMBs

14%

of SMBs are prepared for attacks

47%

SMBs have fallen victim to a cyberattack in 2022

Why?

- **Lack of resources**
- **Not the target of security vendors**
- **Not enough time**
- **Protected by the herd**

Before, SMBs would be safe in a herd

The cost of opportunity for attackers was too high

However, AI scales attackers.
Humans don’t limit reach.

So the herd is no longer protection. It’s profit.

At Codacy we believe that Security is akin to a fundamental right.

To make every line of code trustworthy.

Codacy

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