Cyber Security in Healthcare : Utilizing Artificial Intelligence and Database Technology to Enhance Understanding of Cyberattacks

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CYBER SECURITY IN HEALTHCARE:

Utilizing Artificial Intelligence and Database Technology to Enhance Understanding of Cyberattacks

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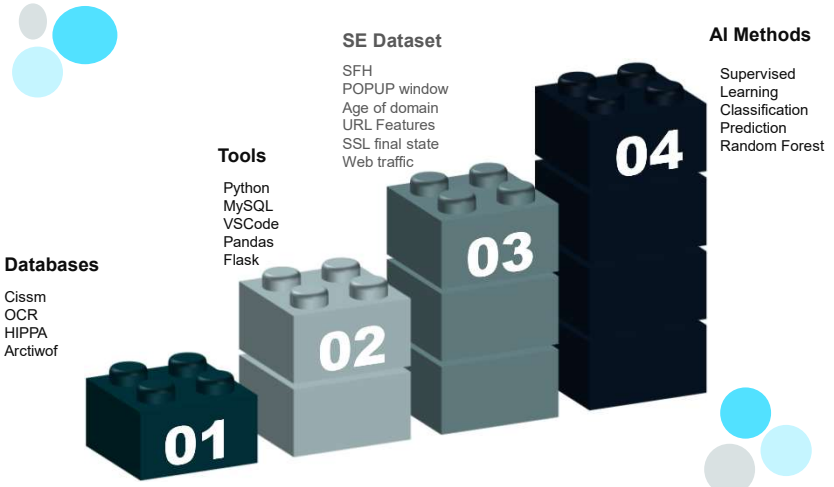
BACKGROUND

- Over 500 healthcare companies reported a variety of cyber breaches that compelled a shutdown in operations.
- Hospital's sensitive services create obscurity in their cyber infrastructure, hindering security experts from assessing their actual cybersecurity needs.
- This work propose a comprehensive database that will provide a representation into existing threat landscape.



RESEARCH OBJECTIVES

- Review existing data sources of cyberattack in healthcare.
- Design a database of existing cyberattacks in healthcare.
- Use AI tools to analyze and build predictive models of cyberattack patterns.
- Evaluate the model to infer outcomes.

EXPECTED OUTCOMES

01 Comprehensive database that fairly represents the threat landscape of cyberattack in healthcare.

02 An interface that permits the continuous growth of the database based on new cyber attacks.

03 Real time visualization of the threat distribution based on predictive machine learning models.

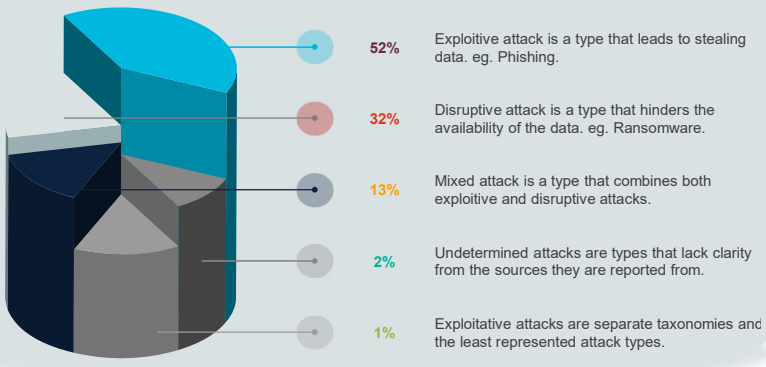
04 A risk assessment plan for dealing with cyberattack of high prevalence.

METHODOLOGY

A	B	C	D	E
Data Acquisition	Structuring	Analysis	Application of AI Methods	Assessment
Existing Databases Public Records User Input	Aggregation of the data in MySQL Database	Analysis of the data for usable insights	Application of ML models for prediction on the database	Recommend mitigation action and incident response plan

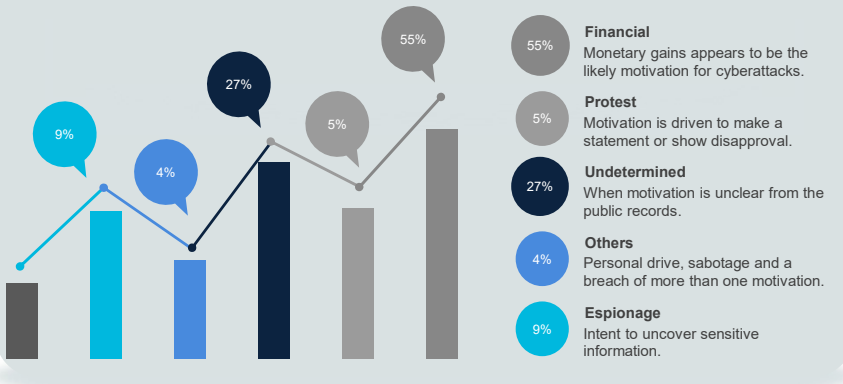
ANALYSIS OF EXISTING DATABASE (CISSM) -TYPE

The center for international and security studies at Maryland (CISSM) provides a database and, analysis into the database provides the statistics on cyberattack Types.



ANALYSIS OF EXISTING DATABASE (CISSM) - MOTIVE

Analysis of the motive of the threat actor based on the underlying published source material.



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