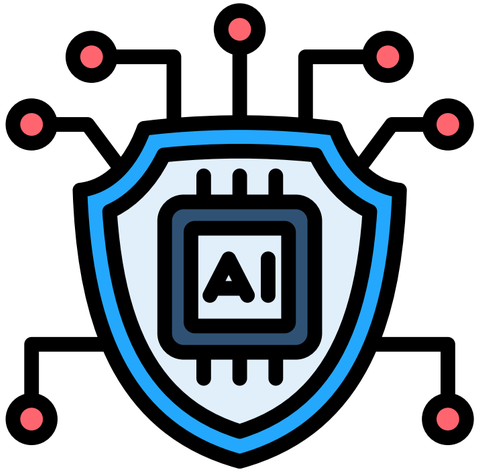
XPACE TECHNOLOGIES

AI-POWERED CYBER DEFENSE

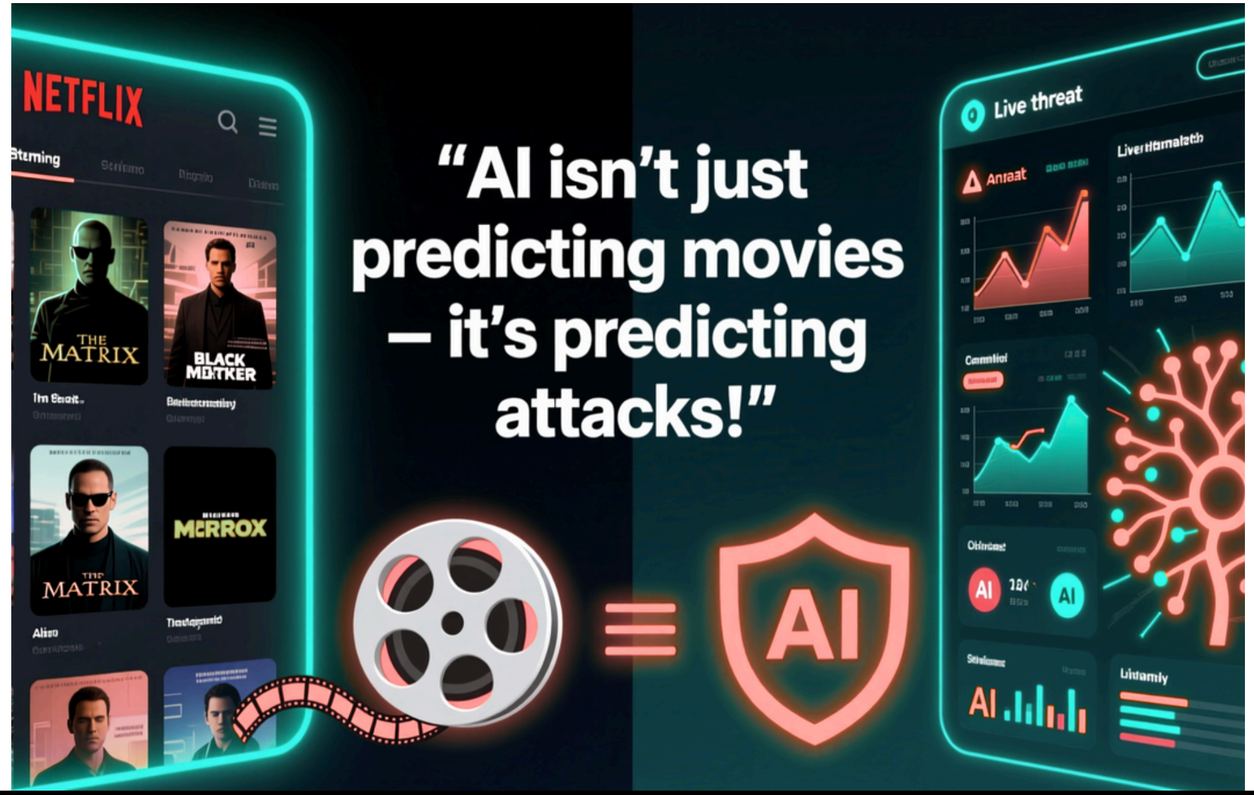
From Threat Hunting to Anomaly Detection



ABOUT ME

My name is **Muhammad Raheel**, and I'm the **Founder and CEO of XPACE TECHNOLOGIES.**
I'm an **AI and Cybersecurity** practitioner, educator, and technology consultant with a background in Computer Science.
I've trained over **500 students and professionals**, conducted workshops across Pakistan, and worked on projects like **face recognition systems**, **IoT-based smart devices,** and **AI-powered cybersecurity applications.**

WHY THIS MATTERS



AI is no longer just a tool for entertainment. It's revolutionizing industries like cybersecurity by predicting and preventing potential cyber threats before they happen.

WHAT YOU'LL DO TODAY

- Watch a live attack on a vulnerable system
- See AI detect it in real-time
- Build your own AI threat detector

POLL #1 - CYBERSECURITY AWARENESS

How would you rate your cybersecurity knowledge?

A) Beginner - "I know about passwords and viruses"
B) Intermediate - "I understand basic attacks and defenses"
C) Advanced - "I work with security tools and concepts"
D) Expert - "I design security systems and protocols"

This helps me tailor the session to your level!

THE CYBER BATTLEFIELD - THREATS VS DEFENSES

The Digital Battlefield

THREATS (Attackers) vs DEFENSES (Defenders)

Common Threats:
- Malware - Digital parasites
- Phishing - Digital deception
- DDoS - Digital traffic jams
- Data Breaches - Digital burglary

Traditional Defenses:
- Firewalls - Digital gatekeepers
- Antivirus - Digital immune system
- Encryption - Digital secret codes
- Access Controls - Digital bouncers

⚠️ Problem: Attackers are evolving faster than traditional defenses!

UNDERSTANDING CYBER ATTACKS - REAL EXAMPLES

COMMON CYBER ATTACKS DEMONSTRATED

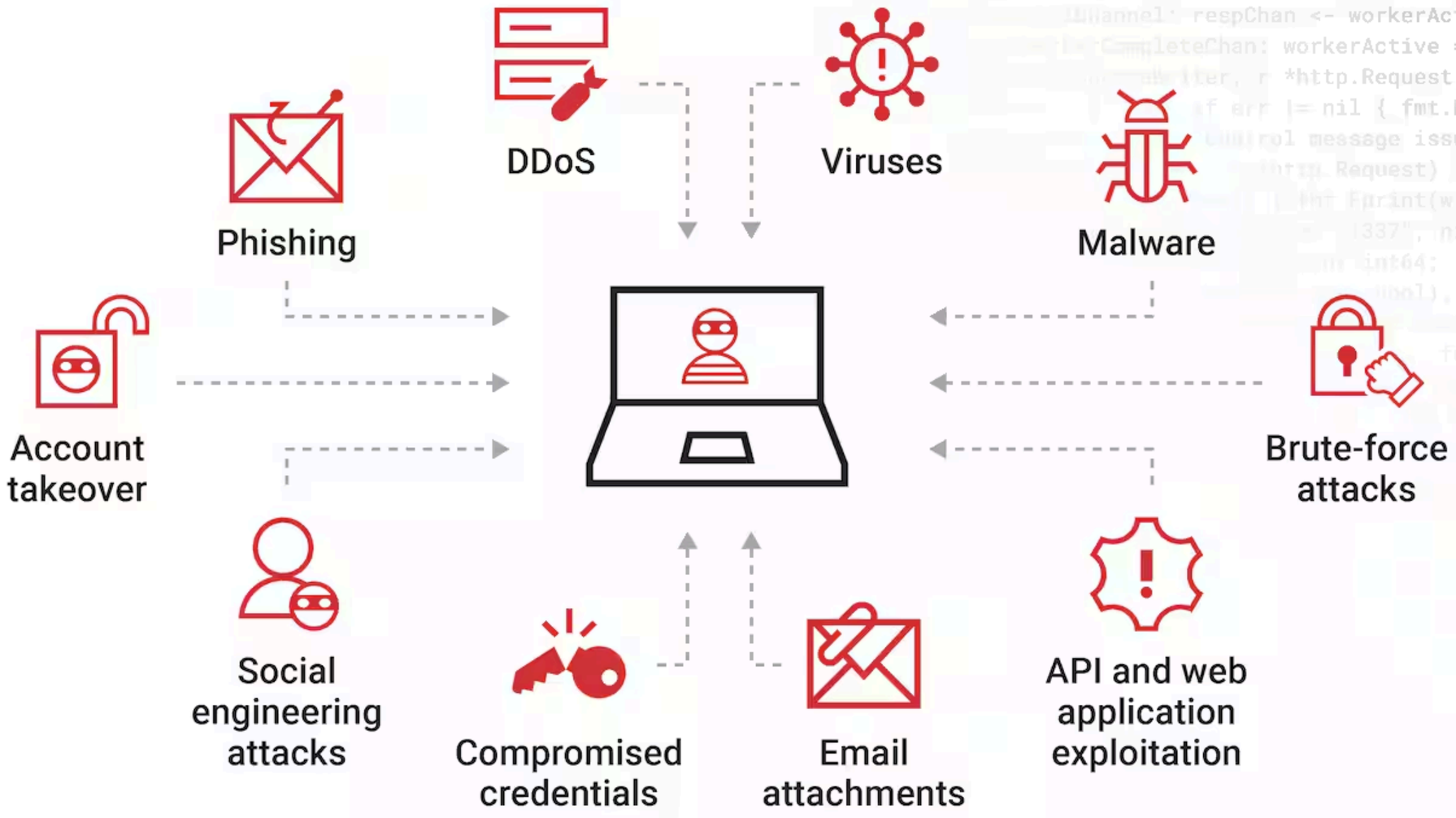
1. SQL INJECTION
   - What: Injecting malicious database commands
   - Impact: Data theft, admin access
   - Example: ' OR 1=1-- bypasses login

2. CROSS-SITE SCRIPTING (XSS)
   - What: Injecting malicious scripts
   - Impact: Session hijacking, data theft
   - Example: <script>alert('Hacked')</script>

3. BRUTE FORCE ATTACKS
   - What: Guessing credentials systematically
   - Impact: Account takeover
   - Example: Trying admin/password combinations

4. PATH TRAVERSAL
   - What: Accessing unauthorized files
   - Impact: Sensitive data exposure
   - Example: ../../../etc/passwd

UNDERSTANDING CYBER ATTACKS - REAL EXAMPLES



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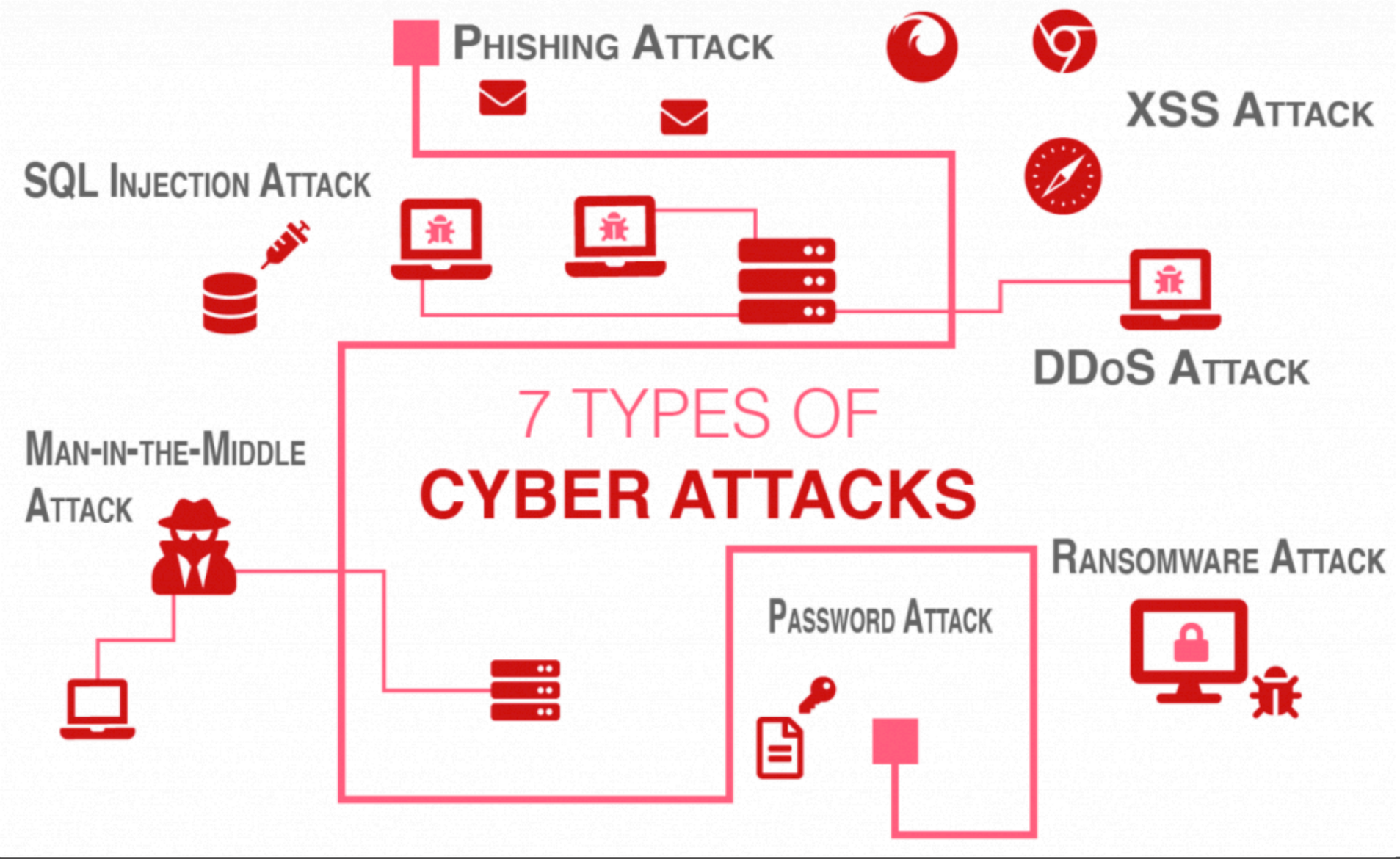


POLL #2 - SECURITY CONCERNS

POLL: Which Cyber Threat Worries You Most?

A) Data Breaches - Personal information theft
B) Ransomware - Systems held hostage
C) Phishing Attacks - Social engineering
D) DDoS Attacks - Service disruption
E) Insider Threats - Trusted people gone bad

Why this matters: Different threats require different AI approaches!

THE LIMITS OF TRADITIONAL SECURITY

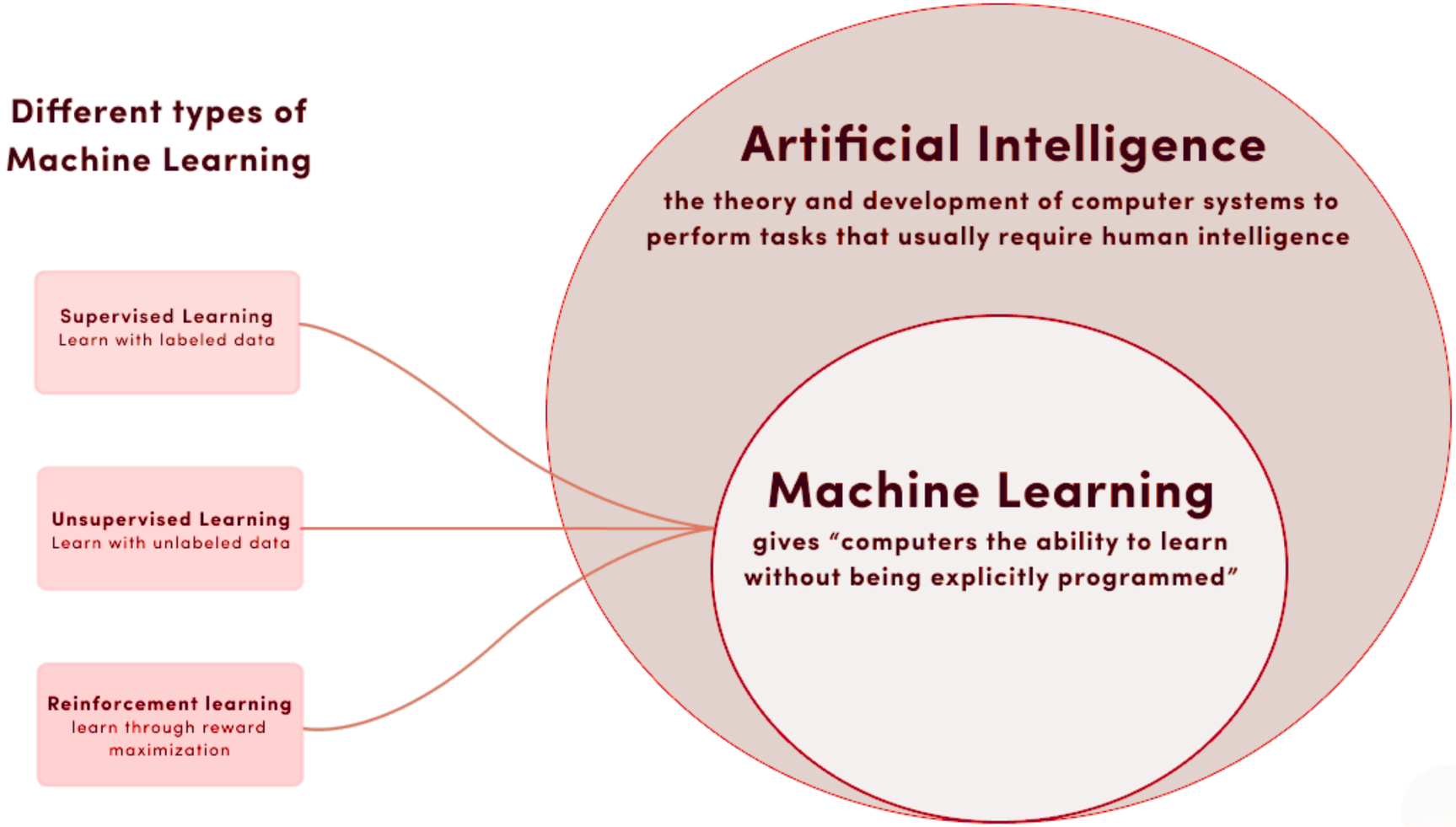
WHY TRADITIONAL SECURITY IS FAILING

Signature-Based Detection Problems:
- Only knows past attacks
- Zero-day attacks slip through
- High false positives
- Manual updates required

Human Limitations:
- Too much data to analyze
- Attack patterns too complex
- Response times too slow
- Analyst fatigue

The Numbers:
- 350,000 new malware samples daily
- Average breach detection time: 200+ days
- Security teams overwhelmed with alerts

WHAT IS AI


Different types of Machine Learning
Supervised Learning
Learn with labeled data
Unsupervised Learning
Learn with unlabeled data
Reinforcement learning
learn through reward maximization
Artificial Intelligence
the theory and development of computer systems to perform tasks that usually require human intelligence
Machine Learning
gives "computers the ability to learn without being explicitly programmed"

GAME CHANGER AI

🤖 AI: THE GAME CHANGER IN CYBERSECURITY

What AI Brings to Security:

- PATTERN RECOGNITION - Learns normal vs abnormal
- PREDICTIVE ANALYSIS - Anticipates attacks
- REAL-TIME PROCESSING - Analyzes at machine speed
- CONTINUOUS LEARNING - Improves over time
- SCALABILITY - Handles massive data volumes

🔄 The Shift:
FROM: Reactive (After breach)
TO: Proactive (Prevent breach)

FROM: Signature-based (Known threats)
TO: Behavior-based (Anomaly detection)

AI IN CYBERSECURITY - REAL-WORLD APPLICATIONS

HOW AI IS TRANSFORMING SECURITY TODAY

1. Threat Detection & Classification
   - Analyzes network traffic patterns
   - Classifies malware families
   - Identifies attack techniques

2. Anomaly Detection
   - Learns normal user behavior
   - Flags unusual activities
   - Detects insider threats

3. Phishing Prevention
   - Analyzes email content & metadata
   - Detects fake websites
   - Identifies social engineering patterns

4. Vulnerability Management
   - Predicts attack paths
   - Prioritizes patch management
   - Simulates attack scenarios

POLL #3 - AI PERCEPTIONS

POLL: What's Your View on AI in Security?

A) Very optimistic - AI will solve most security problems
B) Cautiously optimistic - AI helps but has limitations
C) Neutral - Wait and see approach
D) Concerned - AI introduces new risks
E) Not sure - Need to learn more

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THANK YOU

FOR YOUR ATTENTION AND PARTICIPATION

+92 345 2510056

mraheel.naseem@outlook.com

https://xpacetechnologies.com/
https://codacttechnologies.com/

Office # 302, Ceasers Tower
Shahrah e Faisal, karachi