

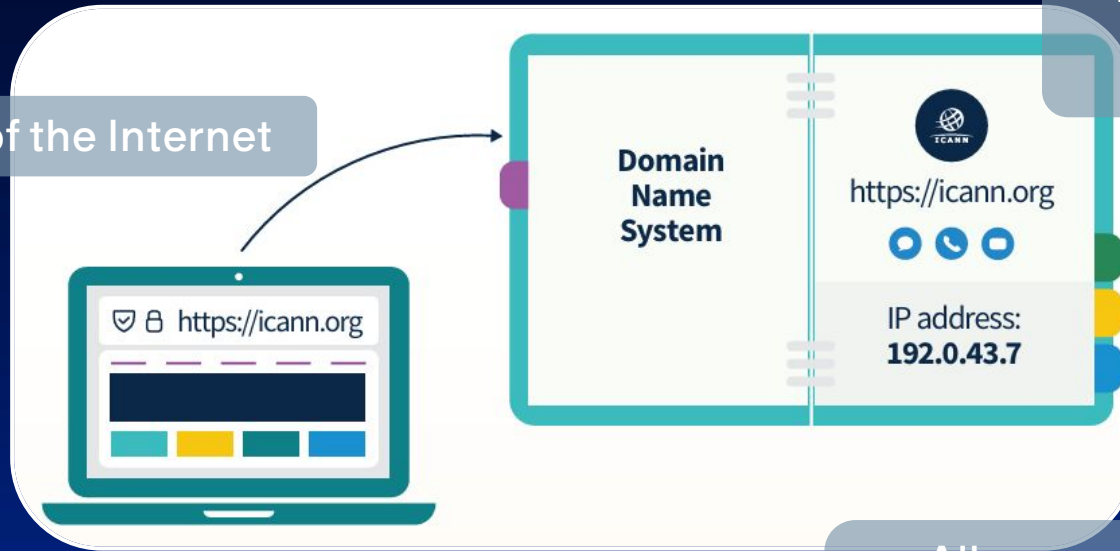


AI and the Future of DNS Security

Presentation by Minahil Fatima

The Domain Name System

Address book of the Internet



Enables human friendly web navigation

Connects IP addresses to domain name

Allows us to have a globally connected and easily accessible Internet

DDoS attacks

Pharming

Botnets

Phishing

Malware

Spam

DNS Security Challenges



ICANN's Efforts: DNS Abuse Mitigation Program



1

Contributing data and expertise to fact-based discussions



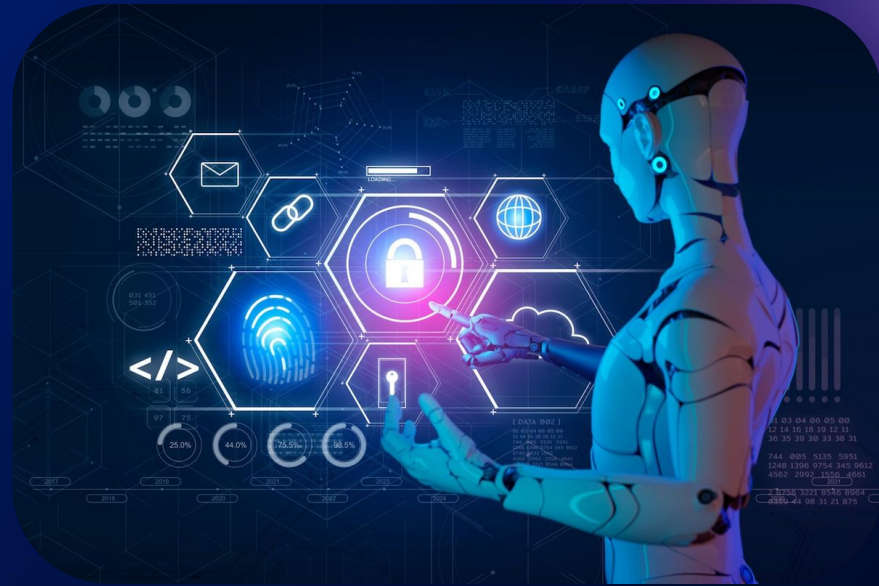
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Providing tools to the ICANN community



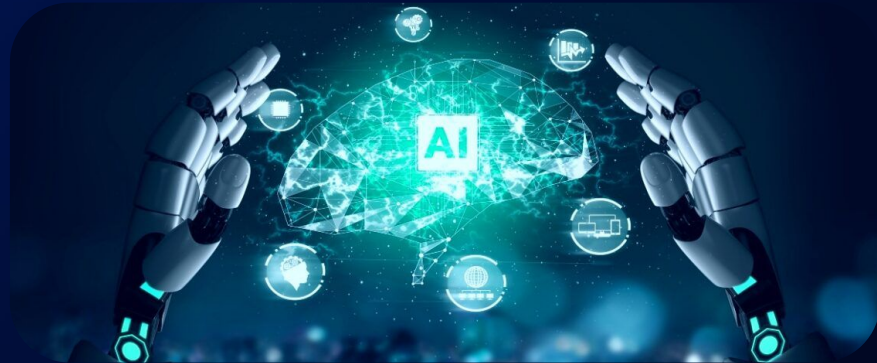
3

Enforcing contractual obligations with registries and registrars



AI's Role in Strengthening DNS Security

So how exactly can AI help?



AI Advancements to the DNS Abuse Mitigation Program

Traditional Methods:

- Manual domain reviews by cybersecurity teams
- Blacklists, which are only updated after an attack
- Delayed response times

AI Methods:

- Real-time analysis of new domain registrations
- Automated risk scoring for potentially abusive domains
- Faster and more efficient decision-making

INFERMAL and Predictive AI

**INFERMAL: INFERENCE
ANALYSIS OF MALICIOUSLY
REGISTERED DOMAINS**

**PREDICTIVE
ANALYTICS**

AI-powered intervention could prevent **thousands of cyber attacks** every year, making the Internet safer for everyone.

AI + Blockchain – The Future of DNS Security



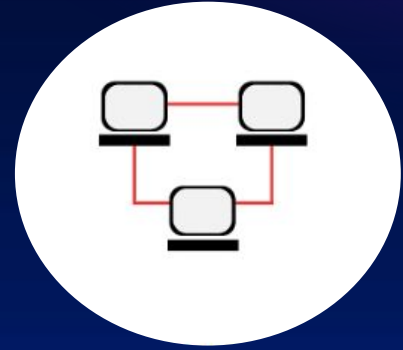
Decentralized

No single organization has full control; instead, decision-making is shared across multiple participants



Network Consensus

Changes to data must be validated by multiple participants before being accepted, preventing unauthorized modifications



Distributed

Data is stored across multiple locations, so even if one part is compromised, the system remains secure and unchanged

Addressing Concerns: Can AI be Trusted?



AI should be used alongside human oversight, not as a replacement

Building a Safer Internet with AI

Key Points:

1. AI is not just a tool for responding to DNS threats—it can **proactively prevent** them, making the Internet safer for everyone
2. ICANN and the Internet community must **work together** to ensure AI is used responsibly and effectively



The background is a deep blue with abstract, glowing hexagonal patterns. A prominent wave-like structure made of small, bright blue dots curves across the lower left and bottom center. Other fainter hexagonal grids are visible in the top left, top right, and bottom right corners. A single, small, bright blue line segment is located near the bottom center, just below the text.

Thank You