



# Asymmetric Resilient Cybersecurity

*Cyber attacks are persistent*

*Cyber attack consequences can be devastating*

*Attackers have the advantage*

Our world relies on interconnected data, services, and computing resources for all aspects of our daily lives. Virtually all sectors of our economy have come to critically depend on their availability, correctness, and ubiquity—failure in any part of the system could have disastrous consequences on the rest of the system.

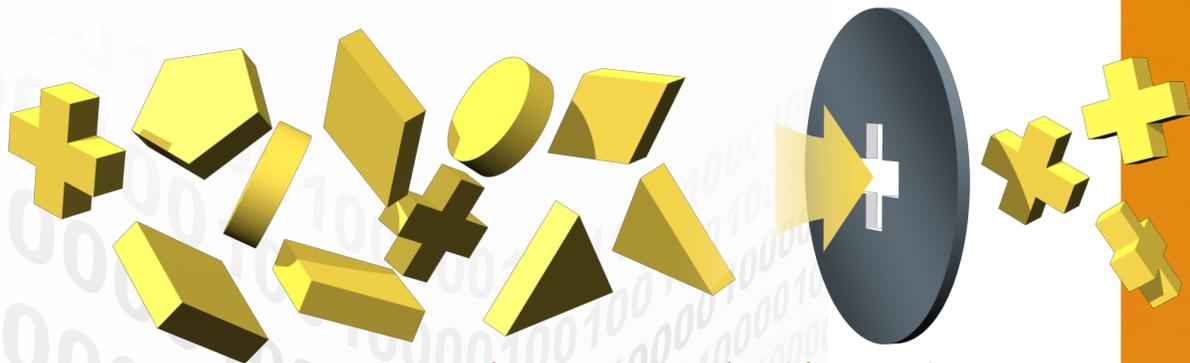
The Asymmetric Resilient Cybersecurity Initiative is working to deliver the theory, processes, methodologies, and algorithms that will enable a resilient cyber infrastructure with an asymmetric advantage to thwart adversaries who seek to infiltrate and damage our national security through digital means.

We hypothesize that we can create resilient infrastructures and simultaneously move the asymmetric advantage from the attacker to the defender thereby altering how cybersecurity is implemented today.

These capabilities will be driven by and measured by real-time security posture and cost-benefits metrics as well as integrated dynamic, multi-scale graph analytics. This resilient infrastructure will then:

- » protect energy generation and distribution SCADA systems thereby increasing energy infrastructure reliability
- » protect nuclear systems preventing their infiltration by malicious actors
- » improve the ability to anticipate, monitor, engage, and respond to threats, and thereby more effectively prevent and counter terrorism.

For more information about  
this exciting research:  
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## What is Asymmetric Resilient Cybersecurity?

**Asymmetric:** Attacks through cyberspace are met with tactical, operational, and strategic effects that benefit the defender.

**Resilient:** Cyber systems that operate effectively even when under overt cyber attack, and difficult for an adversary to exploit once entry is gained.