



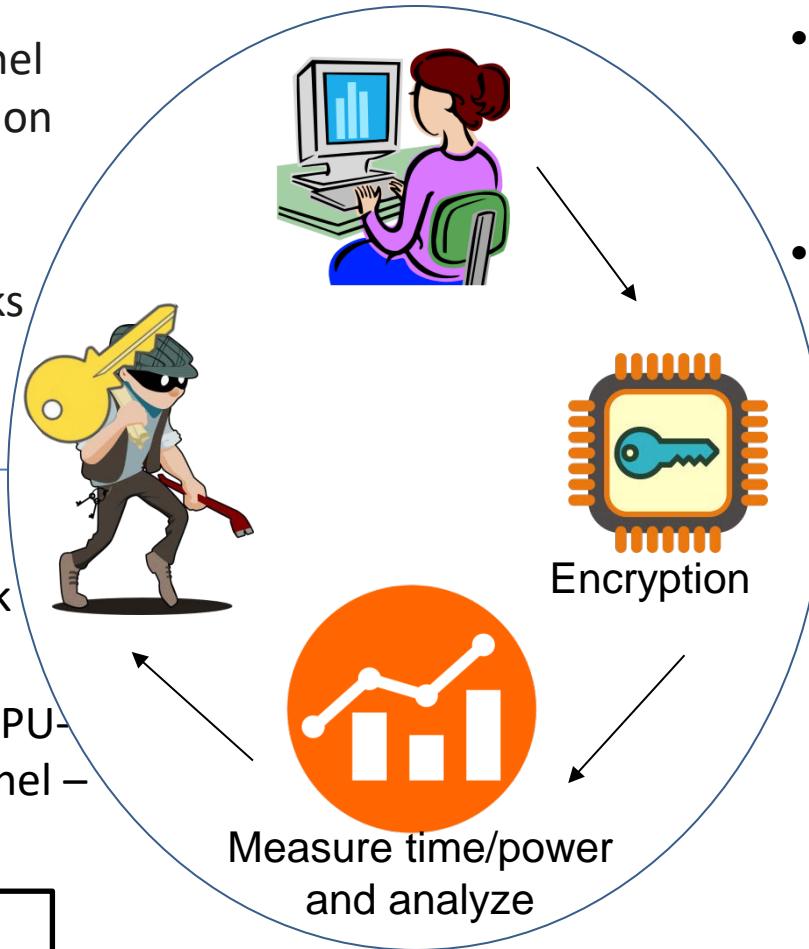
STARSS: Small: Side-Channel Analysis and Resiliency Targeting Accelerators

Challenge:

- Evaluate side-channel attack vulnerability on accelerators
- Improve resiliency against these attacks

Solution:

- Examined the attack surfaces
- Discovered a new GPU-unique timing channel – coalescing unit



Scientific Impact:

- Increases GPU deployments in cryptographic processing for big data for high throughput
- Answer the open questions of “is a GPU architecture a secure platform for cryptographic processing”

Broader Impact:

- Make future computing devices more resilient to data leakage
- Develop online materials on vulnerabilities and protections
- Engage undergraduates in research opportunities

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