

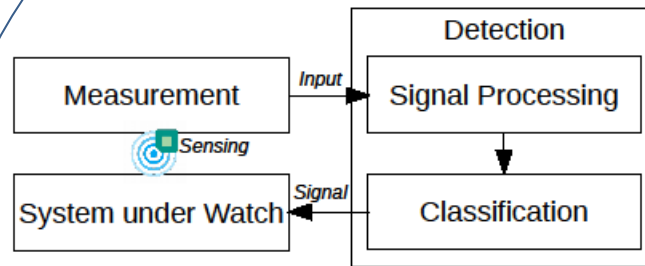
SaTC: CORE: Small: Leveraging Physical Side-Channel Information to Build Detection-Based Rowhammer Defenses

Challenge:

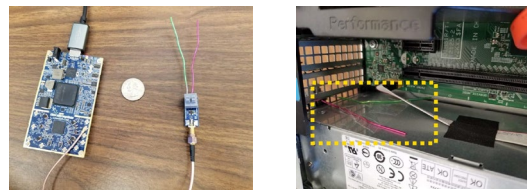
- Finding special patterns in different physical side effects to identify rowhammer attacks
- Leveraging detection results to effectively thwart potential rowhammer attacks

Solution:

- Leveraging correlations between discovered physical side-channel patterns and hammering activities for detection
 - Electromagnetic (EM)
 - Power
 - Acoustic



Overall System Architecture



EM-Based Detector Prototype

Scientific Impact:

- Deepening our understanding of physical side channels in modern computers
- Expanding approaches to building effective defenses against emerging attacks

Broader Impact and

Broader Participation:

- Being integrated into a grad-level course of the PI
 - CPCS 8810 at Clemson Uni.
- Designating funds for one full-time Ph.D. student
- Likely helping industrial practitioners design more secure and dependable systems