

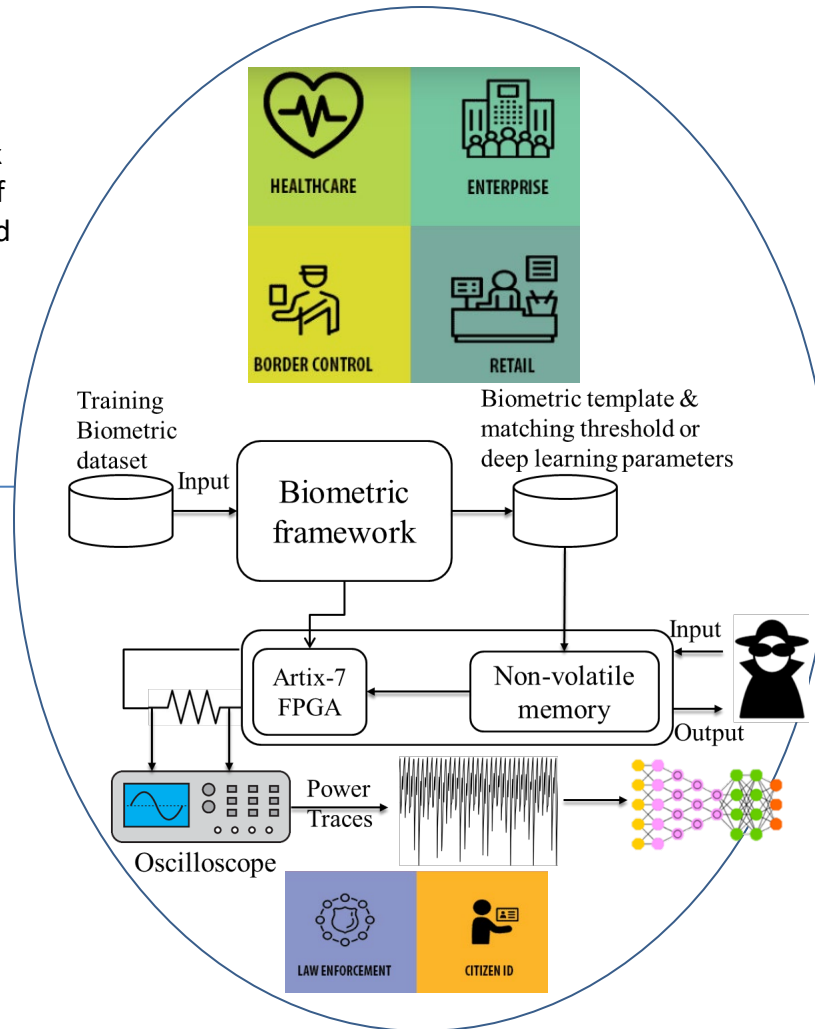
CR11: SaTC: Physical Side-Channel Attacks in Biometric System

Challenge:

- Address side-channel attack within the overall context of biometric vulnerabilities and privacy preservation of individuals.

Solution:

- Design a deep recurrent neural network (Gated Recurrent Unit algorithms) for modeling between profiling power traces and biometric data.
- Re-designing the biometric system with the protected data using domain-specific architecture and hardening mechanism to secure execution.



Scientific Impact:

- The proposal can offer insights for future biometric designers on how to efficiently take advantage of side-channel attack framework to explore biometric vulnerability and counters to achieve security and privacy by domain specific architecture while they provide enhanced security and privacy and maintaining the recognition accuracy of biometric systems .

Broader Impact and Broader Participation:

- Enhancing security, privacy, and convenience of biometric systems for citizens such as healthcare, individuals' mobile devices, patient's authentication in healthcare
- Who will care? homeland security, national identity cards
- Introducing two new courses (biometrics, hardware security)
- Two high school recruited for the summer of 2022

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