

CAREER: Utilizing Principles of Energy Recovery Computing for Low-Energy and DPA-Resistant IoT Devices



Challenge:

- Low-energy, lightweight, and secure devices, which are also resistant against malicious attacks that use power consumption traces to extract private or sensitive information.

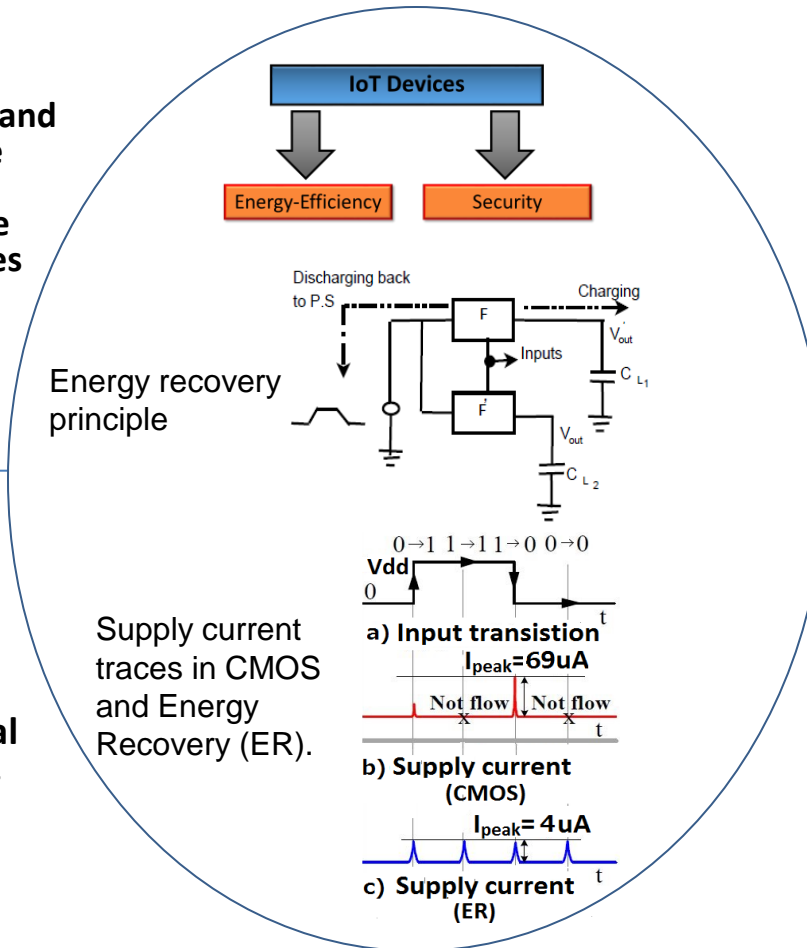
Solution:

- Explores a set of energy recovery (ER) principles for low-energy and differential power analysis (DPA)-resistant IoT devices.

Award #1845448

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Scientific Impact:

- Low-energy and DPA-resistant crypto circuits would pave the way for secure IoT devices which are working under energy constraints.
- Applications in smart devices, medical devices, various cyber-physical systems, etc.

Broader Impact:

- Industry adoption of ER computing based low-energy and secure IoT devices.
- Internships to Appalachian high-school students and underrepresented minorities, and first-generation students.
- Advance the hardware security and cybersecurity education.