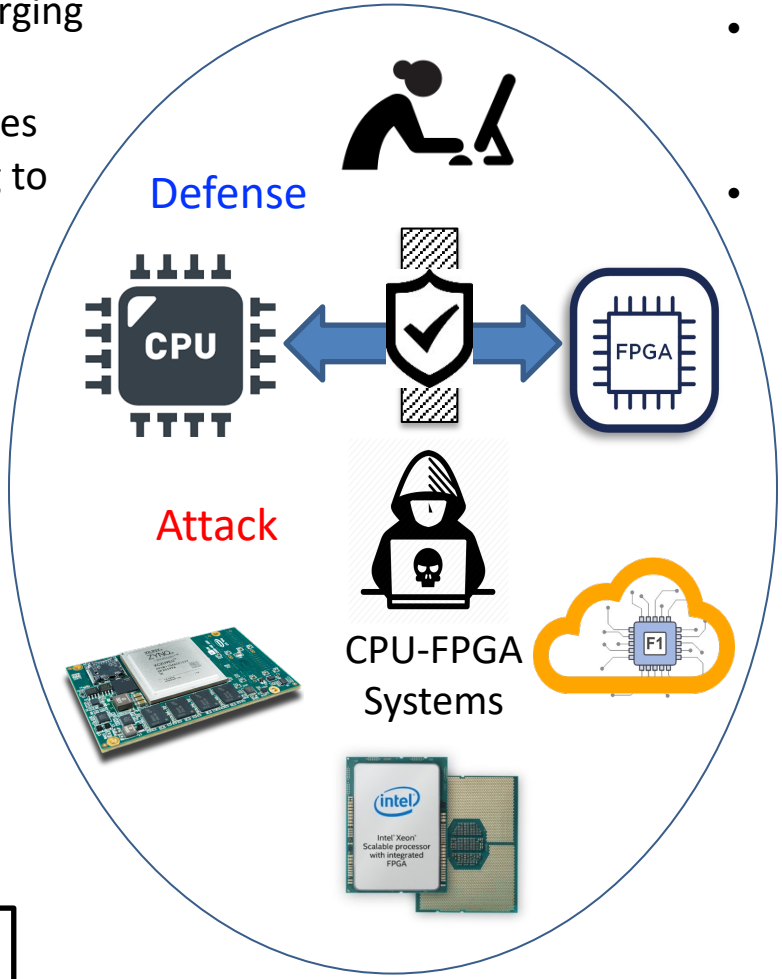
Security of Heterogeneous CPU-FPGA Systems

Challenge:

- New security issues in emerging CPU-FPGA systems
- Hardware security challenges extended from outsourcing to crowdsourcing
- CPU-only or FPGA-only approaches do not suffice



Solution:

- ***Build the fence***: Hardware isolation and secure path
- ***Deploy the security guard***: Approximate verification
- ***Improve the usability***: Secure program slicing

Scientific Impact:

- *Identify* the security gap between heterogenous CPU & FPGA
- *Develop* heterogeneous hardware security framework, verification, and programming solutions

Broader Impact and Broader Participation

- Society: Cloud service providers; hardware designers; end users
- Education: Curriculum design; student mentoring
- Applications: Secure multimedia, AI systems

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