

SaTC STARSS: Tackling the Corner Cases: Finding Security Vulnerabilities in CPU Designs

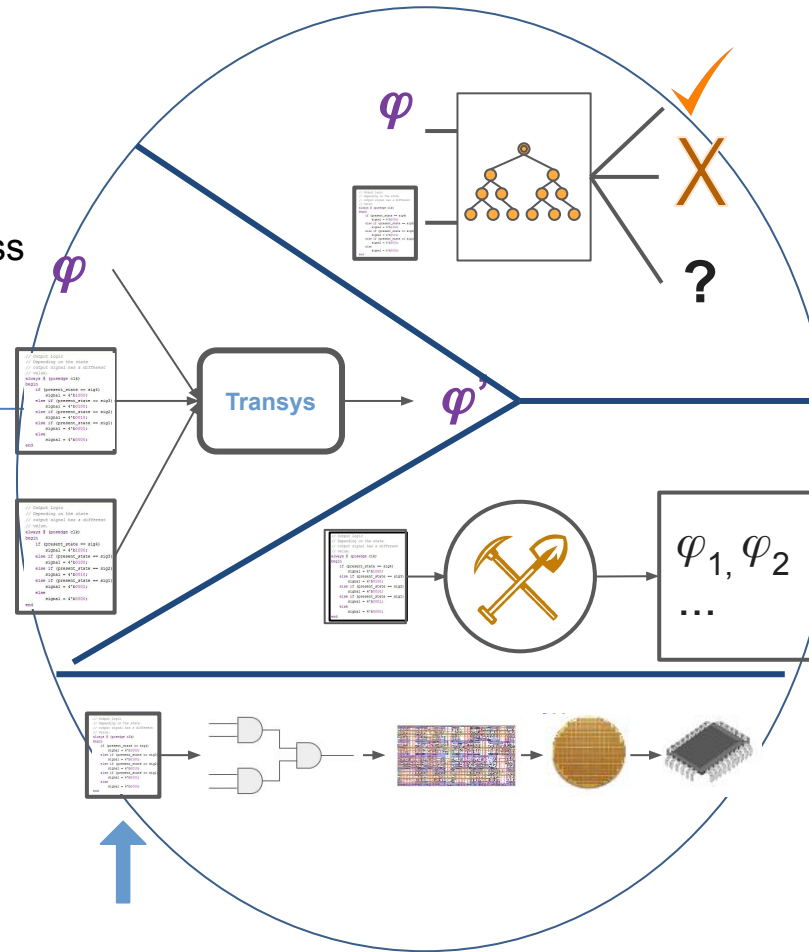
PI: Cynthia Sturton

Challenges:

- Identify security-critical properties of a hardware design
- Find violations and assess the impact to security

Solution:

- Security specification mining; property translation
- Software-style symbolic execution for hardware designs



Scientific Impact:

- Automated approaches, which ease security validation and find corner cases missed by manual review
- A knowledge base of security assertions and information-flow properties

Broader Impact and Broader Participation:

- Improve the security validation process
- Tools used in grad class at outside institution
- Summer REU program with Intel
- Chapter in Handbook of Computer Architecture
- Intel HW Security Award (2nd place)
- Best paper award nomination
- IEEE Design & Test Security TopPicks

PI: Cynthia Sturton
 University of North Carolina at Chapel Hill
 NSF Award #1816637