

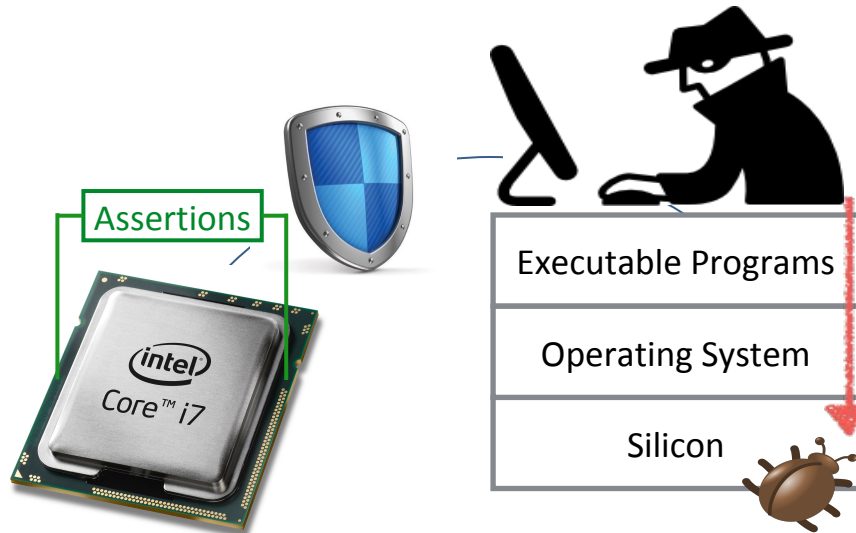
Identifying Security Critical Properties of a Processor



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

Challenge:

- Identify the key security-critical invariants (SCI) of a processor
- Automate the process

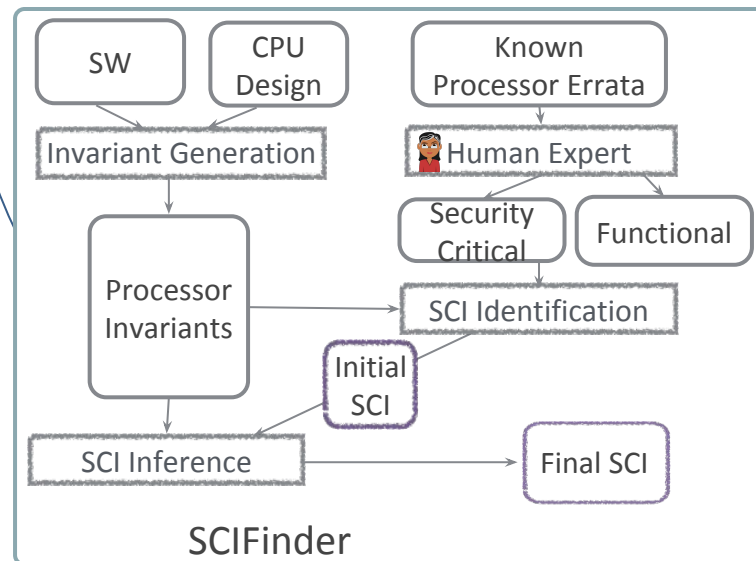


Scientific Impact:

- Strengthen the use of dynamic verification to prevent exploits of vulnerabilities
- Improve our understanding of which ISA features are critical to security

Solution:

- Generate processor invariants
- Leverage known, exploitable errata
- Apply statistical analysis



Broader Impact:

- Improve the state of the art in protecting vulnerable processors
- Involve undergraduate students in research activities