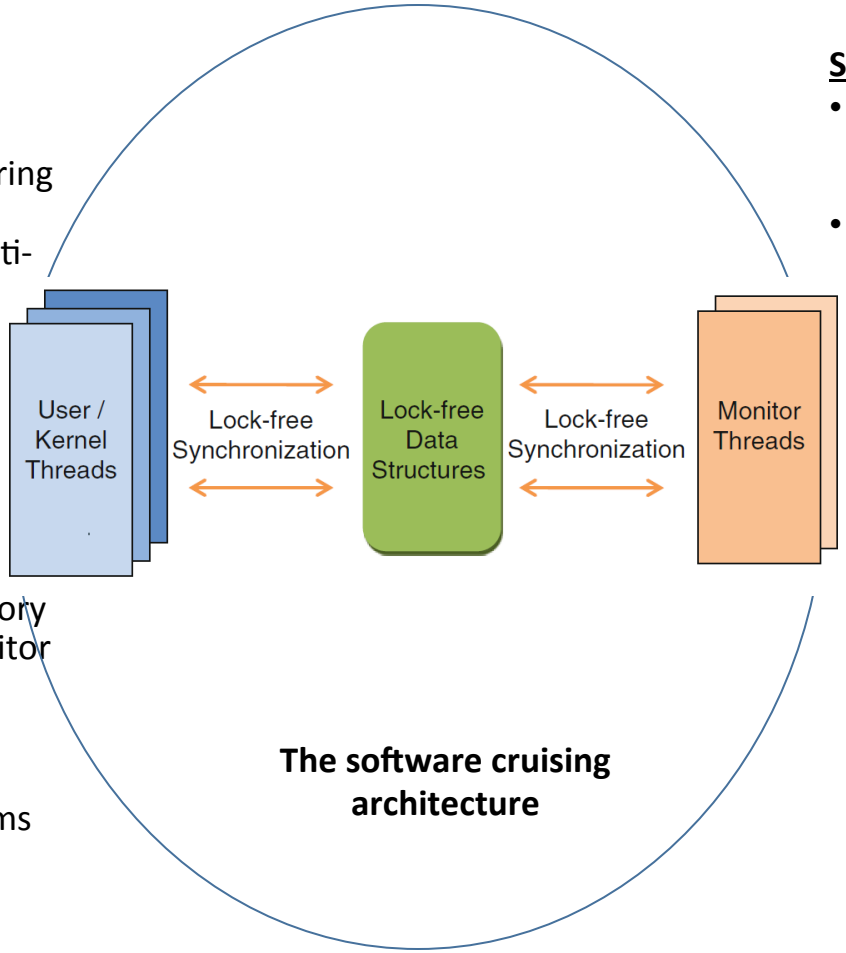
Software Cruising for System Security

Challenge:

- A new software monitoring technique that can effectively leverage multi-core architectures.



The software cruising architecture

Solution:

- Keep metadata in memory and use dedicated monitor thread for security checking
- Use lock-free data structures and algorithms for synchronization to achieve non-blocking

Scientific Impact:

- A new method for building security monitors in user and kernel space
- A novel use of lock-free and non-blocking algorithms in security

A new and better way to leverage multi-core architectures for security purposes.

Broader Impact:

- We have also open source released the Cruiser and Uroboros prototypes to facilitate further research and dissemination. The source code is available at Cruiser: https://code.google.com/p/cruiserpsu/ and Uroboros: https://github.com/s3team/uroboros.

Software Cruising for System Security, PI: Dinghao Wu. NSF CNS-1223710.