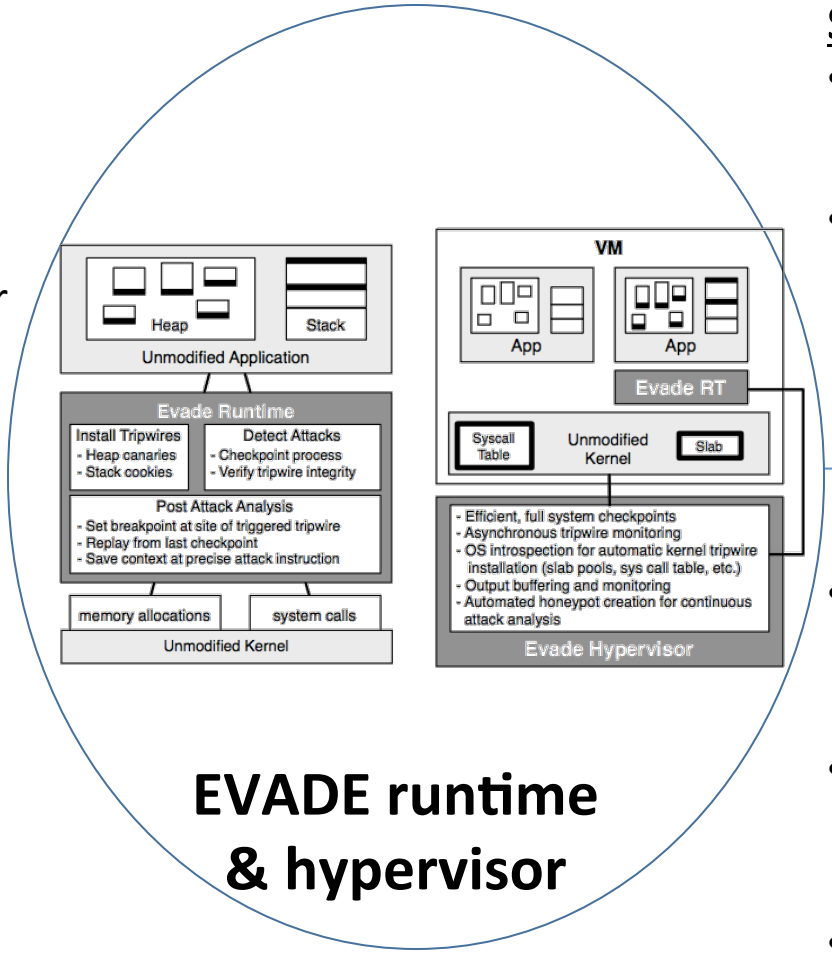
EVADE: EVidence-Assisted Detection and Elimination of Vulnerabilities

Challenge:

- Many attacks leverage memory errors (e.g., buffer overflows) to exploit a system
- Current solutions incur excessive overhead to prevent attacks

Solution:

- Use “trip wires” to collect evidence
- Asynchronously scan for attacks to reduce overhead
- Rollback and carefully analyze to find root causes of attacks



Scientific Impact:

- Provides low-overhead attack detection and analysis
- Cross-layer detection of attacks in applications or OS

Broader Impact:

- Prevents common attacks on unmodified applications
- Practical, low overhead approaches, realistic for deployment
- Several undergraduate research students involved with the project

Awards 1525888 and 1525992

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Tim Wood (George Washington University)