SAFES: A Software-based Architecture for Ensuring Security and Resilience in Medical Device Design

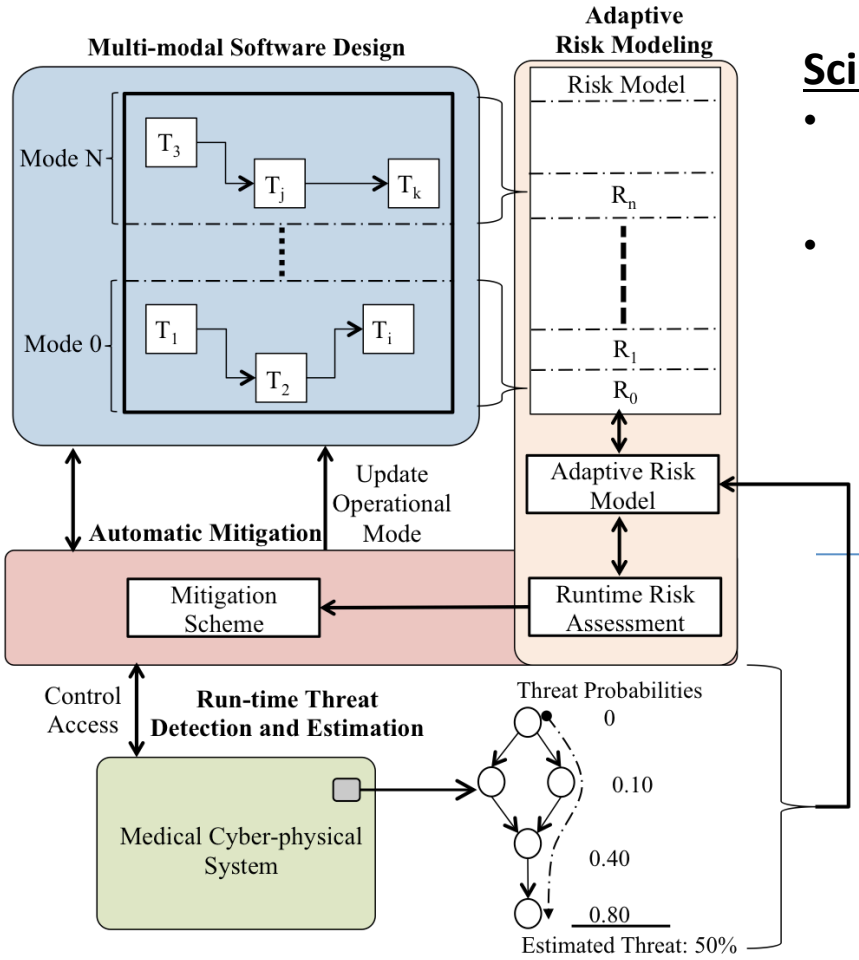
THE UNIVERSITY OF ARIZONA

Challenge:

- Need for intrusion detection specifically designed for embedded systems with minimal area and energy overheads

Solution:

- Multi-modal software design with a deeply integrated risk model
- Integrated runtime security threat detection and estimation system
- Runtime threat mitigation scheme by automatic switching to fail-safe modes



Scientific Impact:

- Comprehensive solution for security in medical devices from design to deployment
- Advances state-of-the-art from detecting attacks to enabling automatic mitigation that preserve continuity of life-critical operations

Broader Impact:

- Better tools for embedded developers to mitigate intrusions/ attacks
- Secure critical systems including medical devices, IoT, automotive, etc.

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