

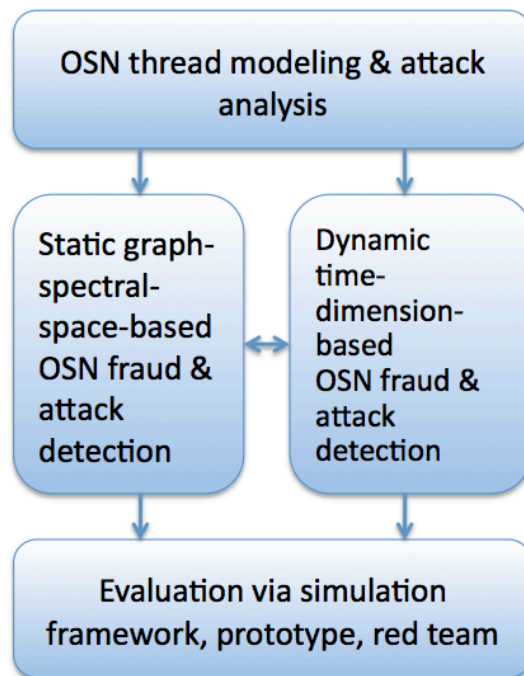
Online Social Network Fraud and Attack Research and Identification

Challenge:

- How to detect various complex OSN attacks, including collusive attacks and dynamic attacks?
- How to simulate attacks and evaluate them?

Solution:

- Spectral-analysis-based detection framework using matrix perturbation
- Vector autoregressive models for dynamic attack detection in both spectral space and visual forms
- Red team evaluation with internal OSN



Research components and relationships

Scientific Impact:

- Advance theoretical and fundamental understanding of OSN fraud and attacks both in abstract, spectral space and in concrete, visual forms
- Advance the design, implementation, and evaluation of practical fraud and attack detection techniques in complex networks

Broader Impact:

- Help build trustworthy and secure OSNs
- Increase security awareness of general OSN users by offering public events and tutorials on OSN fraud and attacks, and their defense
- Empower students to cultivate hands-on skills and research capabilities