Dependability for Complex Networked Systems

## Examples of Dependability Attributes Studied

- Reliability: Probability of system remaining functional
- Availability: Percentage uptime
- Survivability: Functionality maintained after failure
- Resilience: Ability to bounce back from failure

Examples of Systems Analyzed

- Consumer electronics, autonomous vehicles, smart grids, intelligent water distribution networks

Contributions

- Stochastic models of dependability attributes
- Quantification of interdependency
- Prediction of failure sequences
- Integrated cyber-physical simulation
- Vulnerability analysis
- Anomaly detection
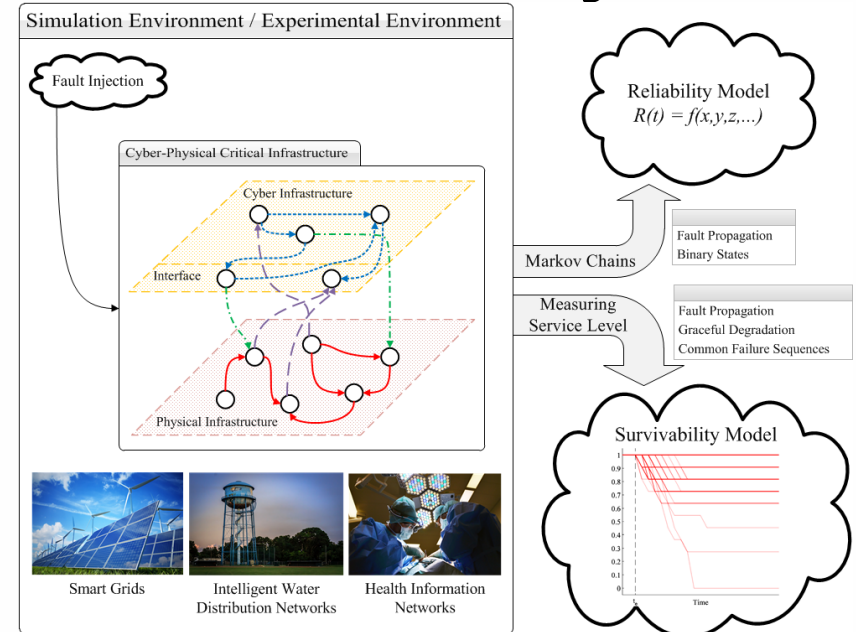
Does "intelligence" make complex networked systems more dependable?

PoC: Sahra Sedigh Sarvestani
Associate Professor
Dept. of Electrical and Computer Engineering
Dept. of Computer Science (courtesy)
sedighs@mst.edu, http://web.mst.edu/~sedighs

Keywords

- Dependability, Critical Infrastructure, Autonomous Systems, Stochastic Modeling, Cyber-Physical Systems, Simulation, Failure Prediction, Interdependency

Recognition

- Best Paper Award, International Symposium on Resilient Cyber Systems
- Two papers cited in the NSA Science of Security Index as Significant Research in Cyber Security

MISSOURI S&T