CPS-Small: Energy-Aware Formal Synthesis for Supervisory Control and Information Acquisition in Cyber-Physical Systems — CNS-1738103 — 10/01/2017 - 09/30/2021

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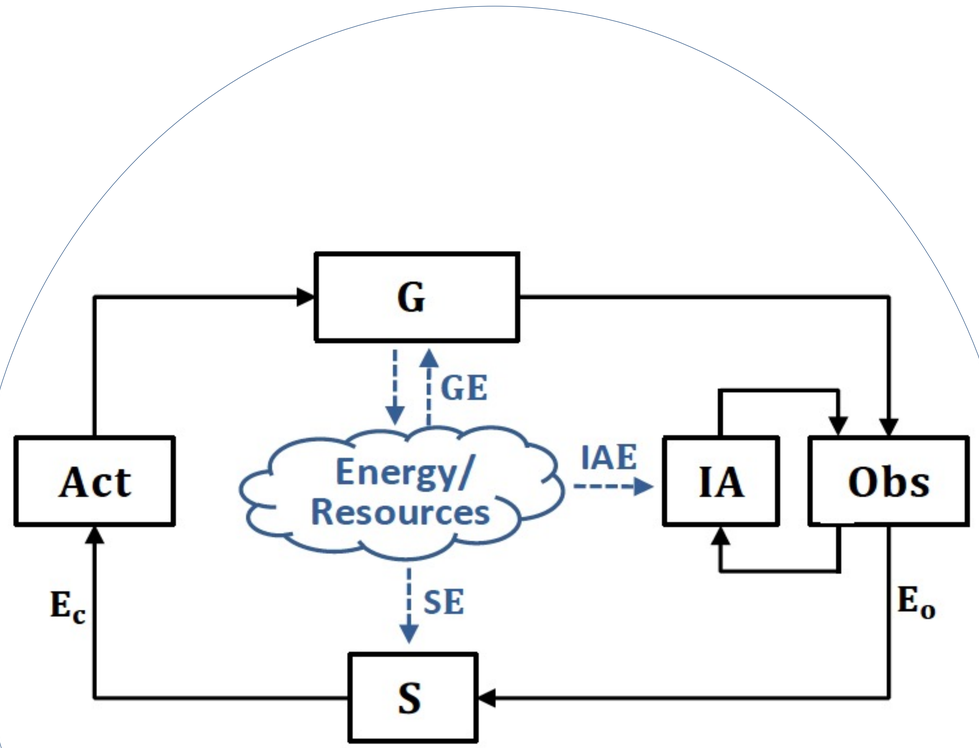
Challenges:

- Deal with both qualitative and quantitative constraints in SC and IA
- Consider opacity properties
- Consider potential attacks on sensors

Solution:

- Discrete abstraction of CPS
- New *game graph* methods to synthesize solutions
- General framework that can also capture opacity enforcement and robustness to sensor deception attacks



Energy-Aware Supervisory Control and Information Acquisition System

Scientific Impact:

- Novel solution methodologies for several classes of problems

Broader Impact:

- Improve *performance*, *privacy*, and *security* in CPS control systems
- Bridge the gap with formal methods
- Development of publicly-available software tools

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