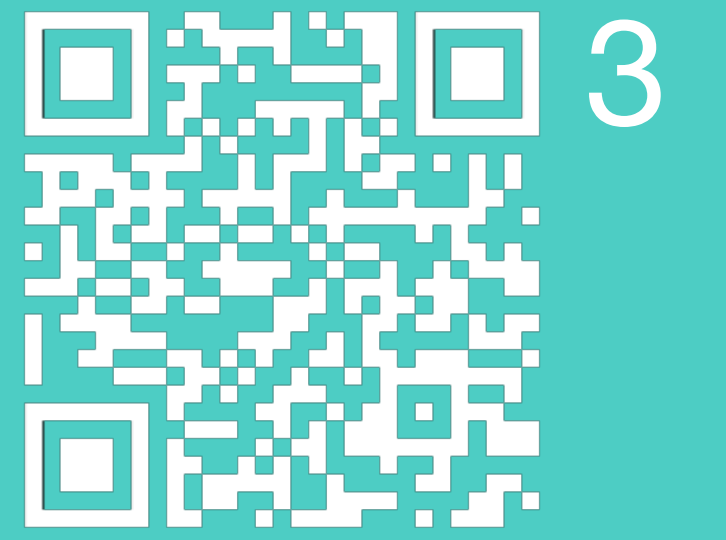
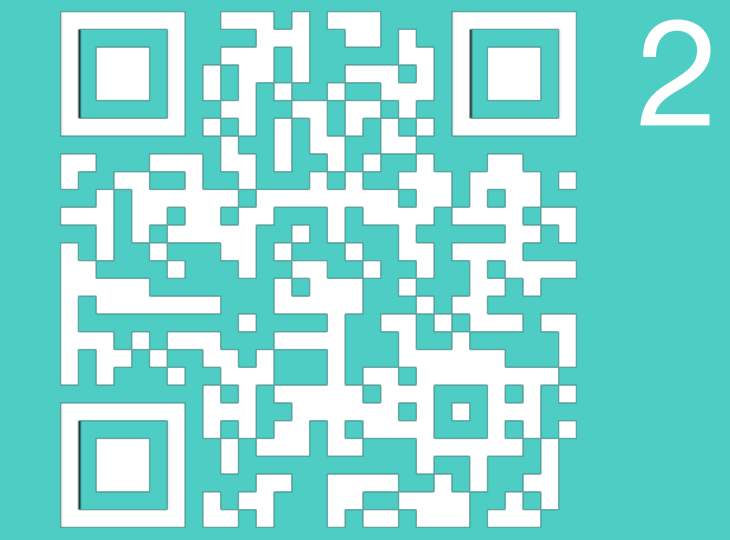
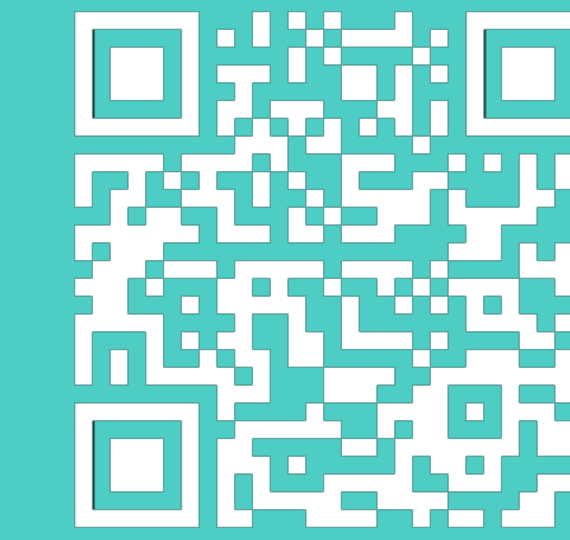


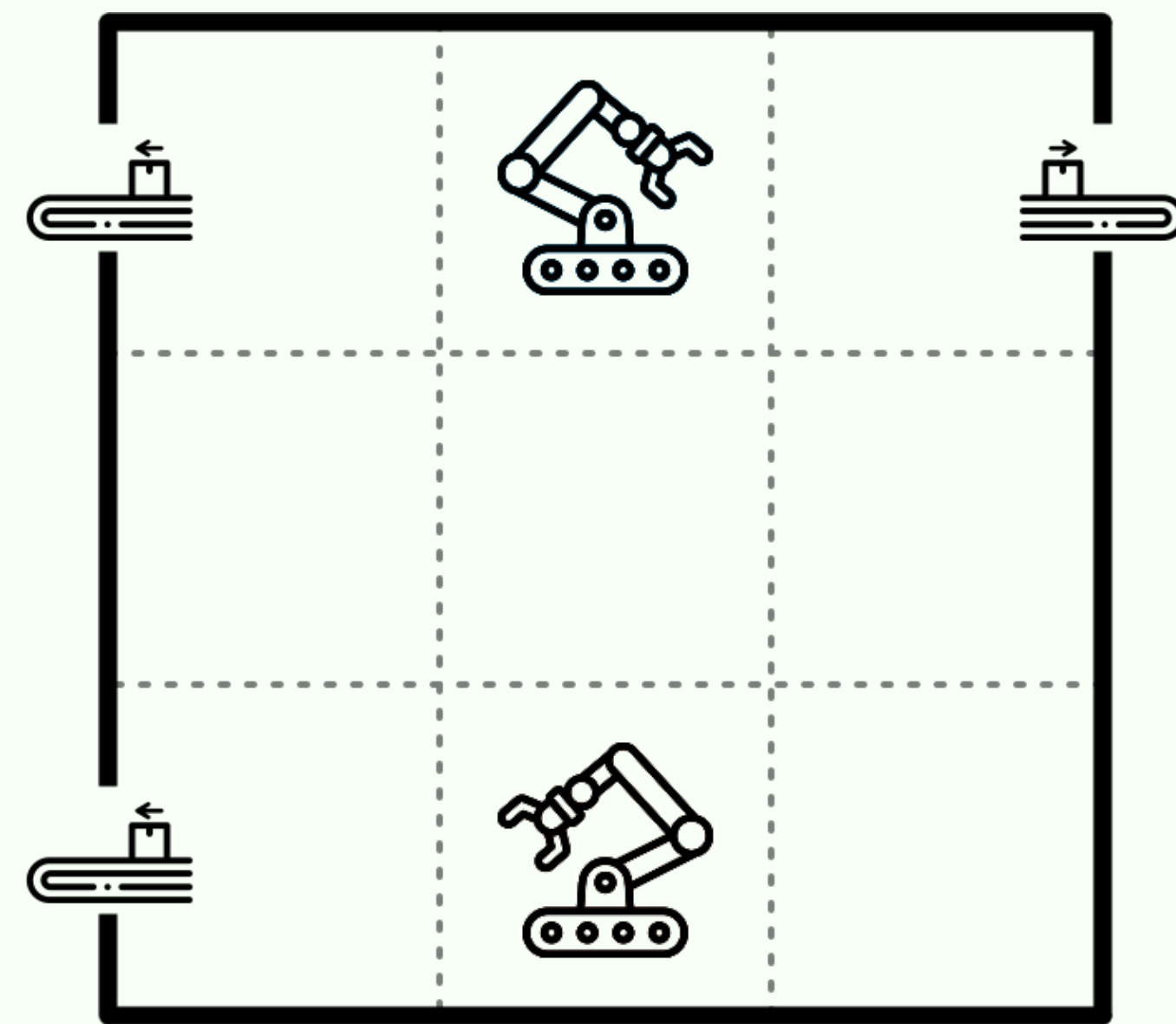
Permissiveness for Strategy Adaptation

Ashwani Anand, Satya Prakash Nayak, and Anne-Kathrin Schmuck

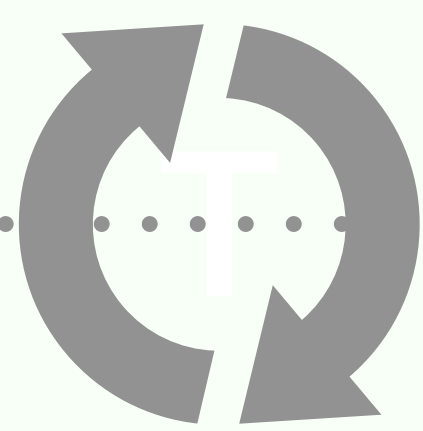
MPI-SWS, Germany



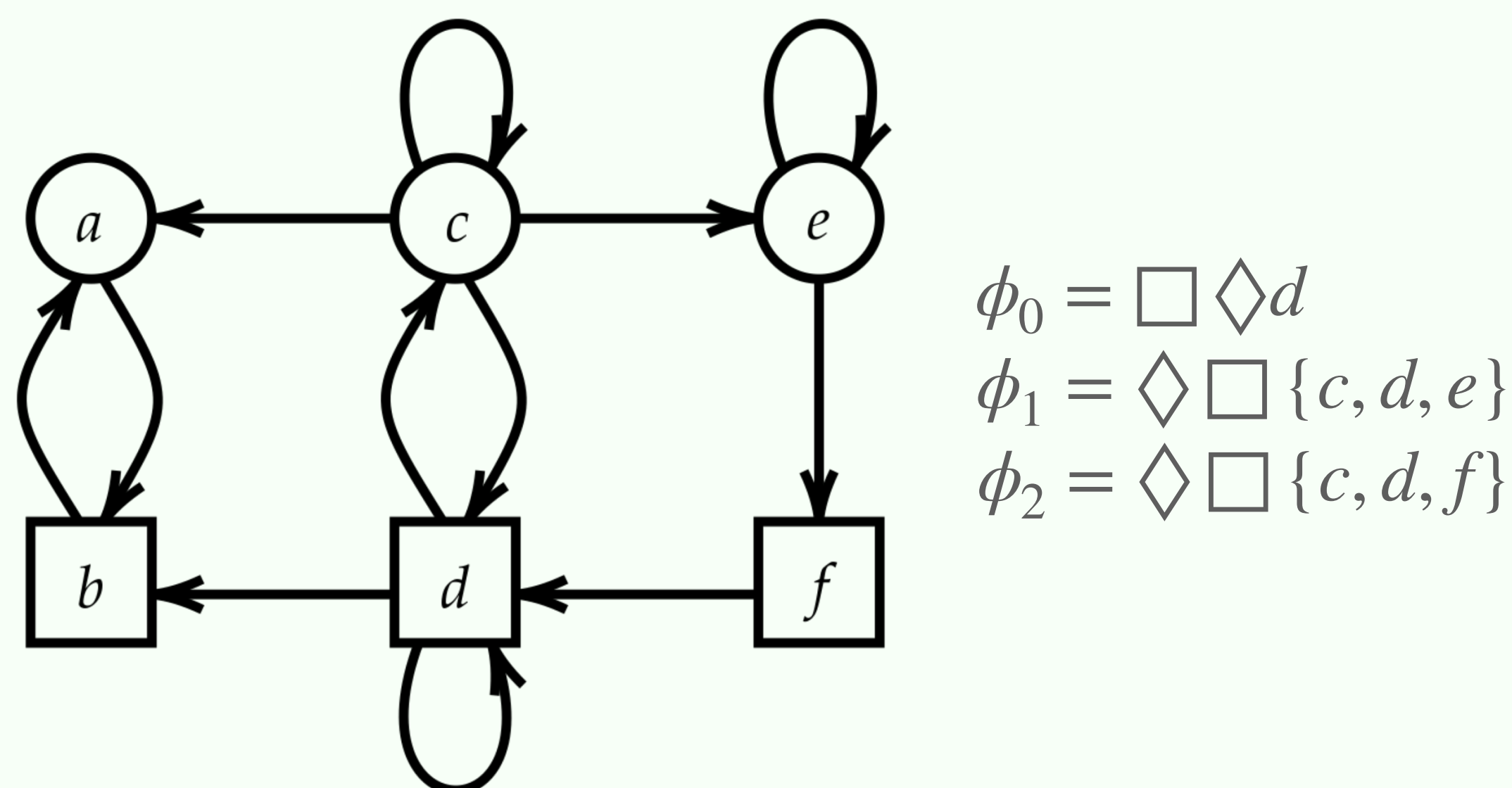
Two Cyber-Physical Systems



- Two systems with own specifications
- Sharing the same workspace
- Independent policies might not exist

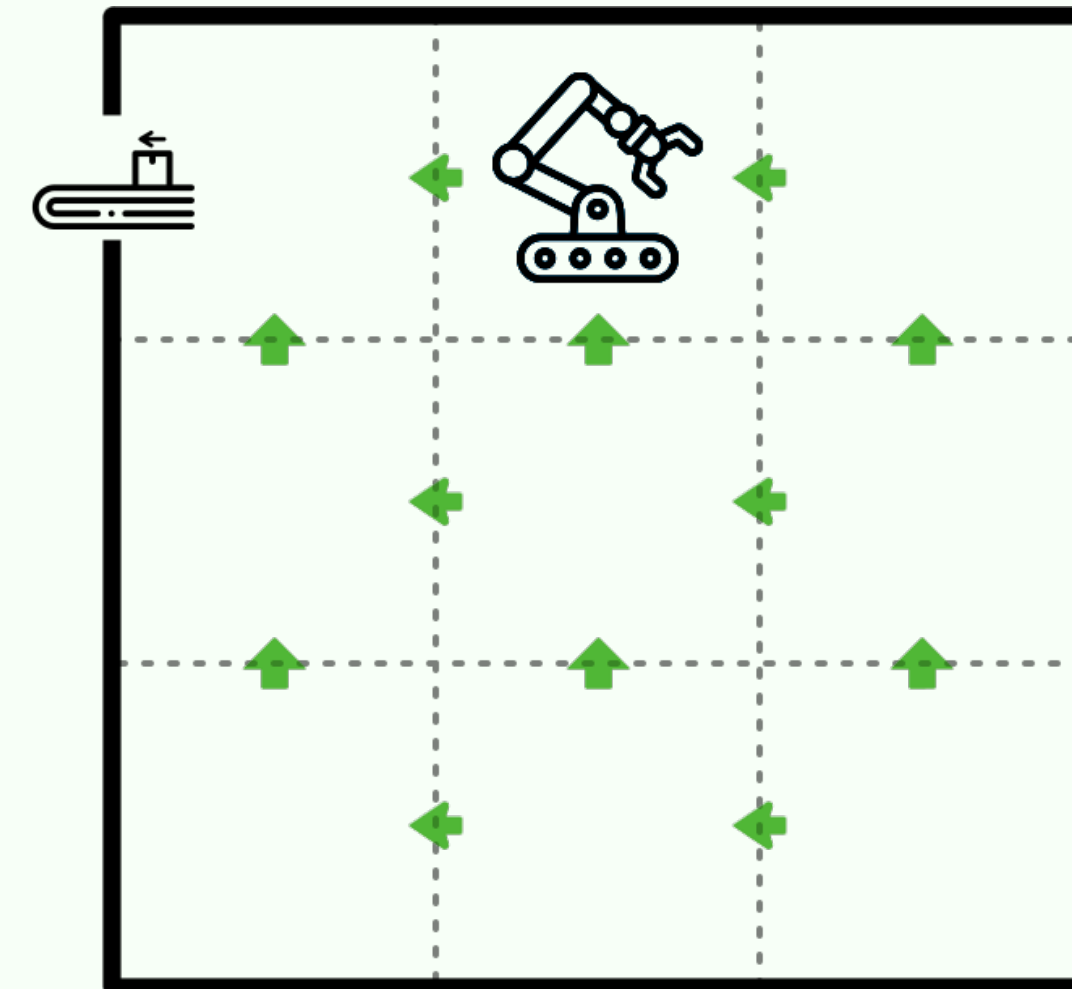


Game on Graphs



- Two players with own objectives
- Sharing the same game graph
- Independent strategies might not exist

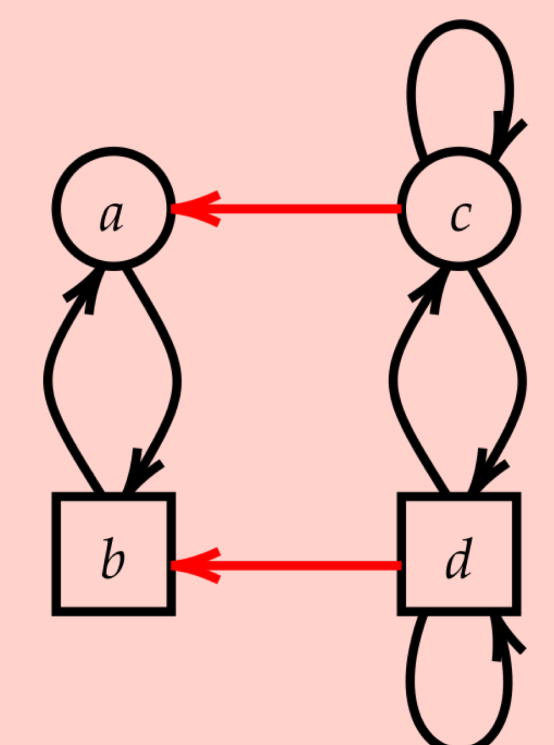
Strategy Templates



- Gives choices to the system,
- Computable in polynomial time, if environment is helpful,
- Matches best known complexity, for adversarial environment.

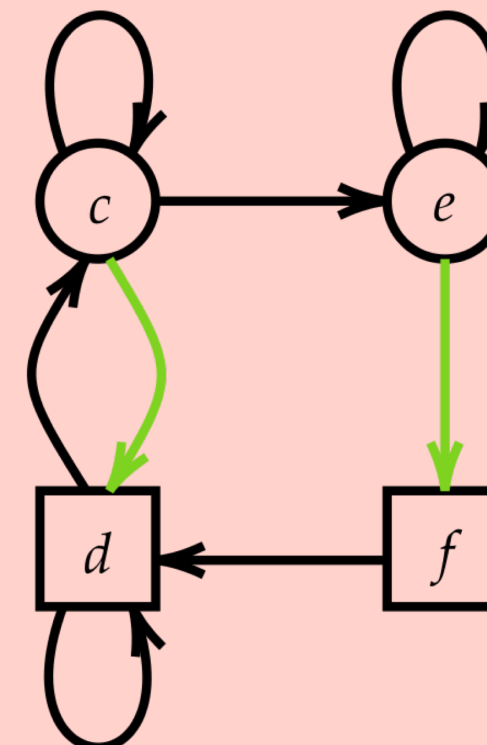
Templates

Safety



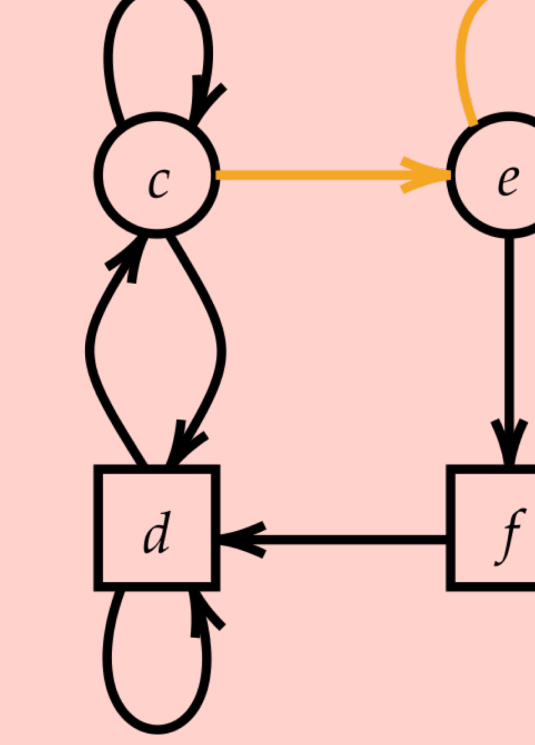
Never take these actions

Group liveness



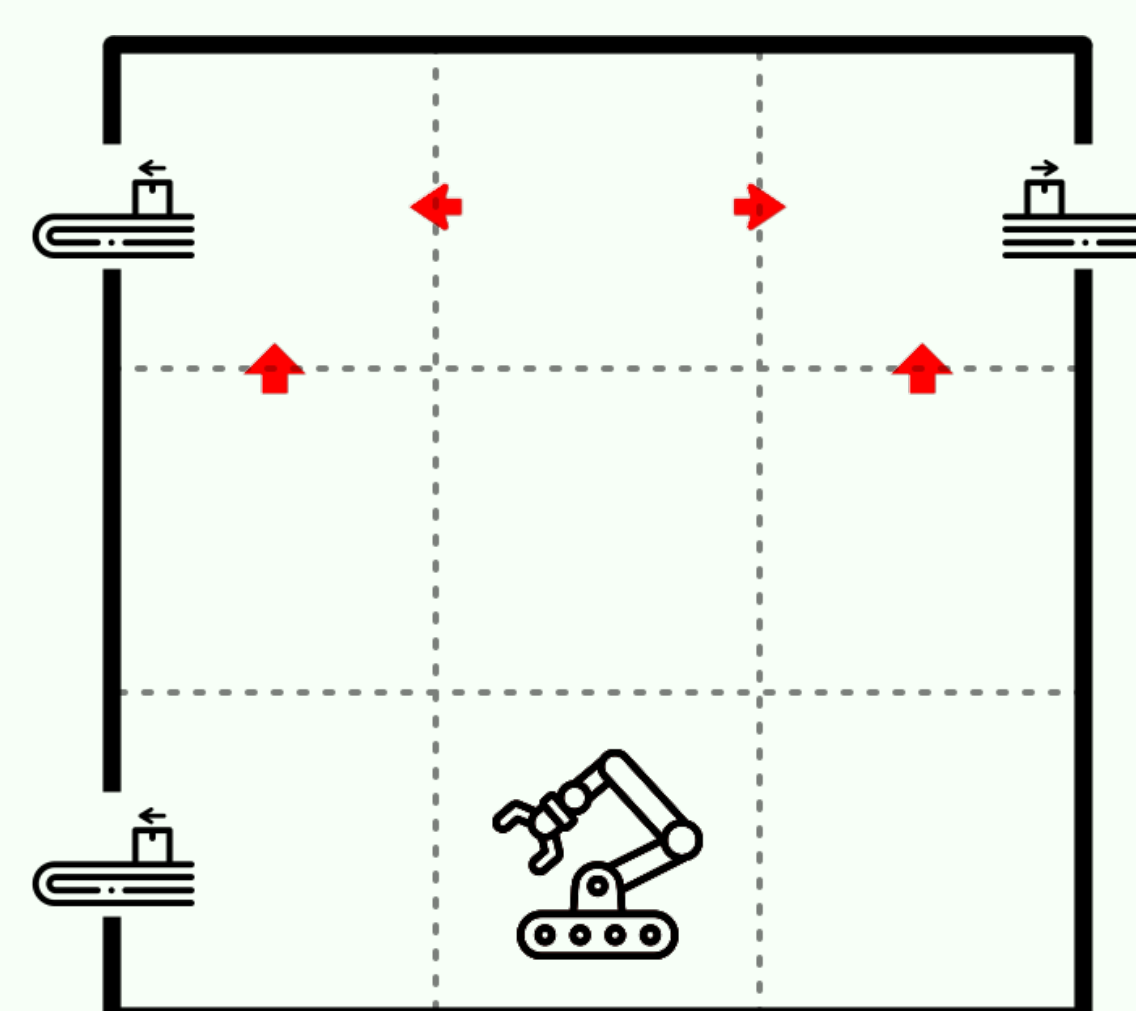
Take one of these actions infinitely

Co-liveness



Take these actions only finitely often

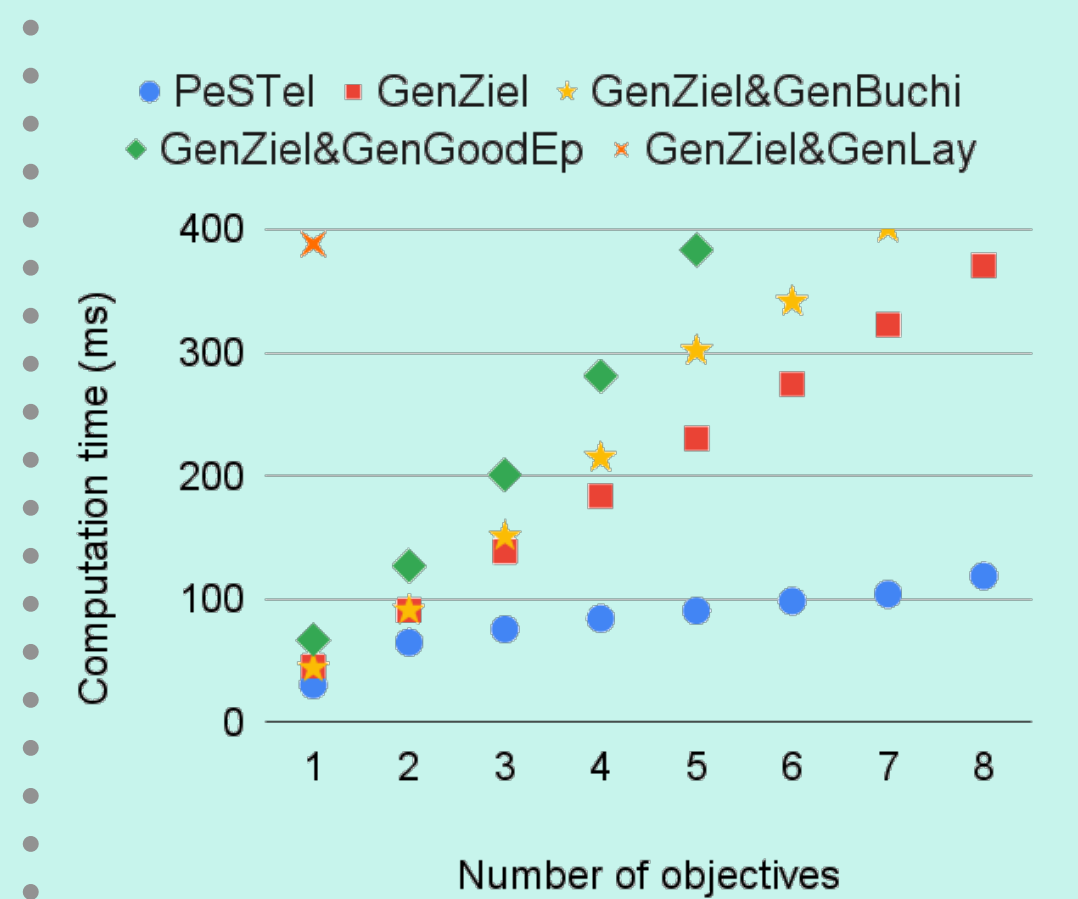
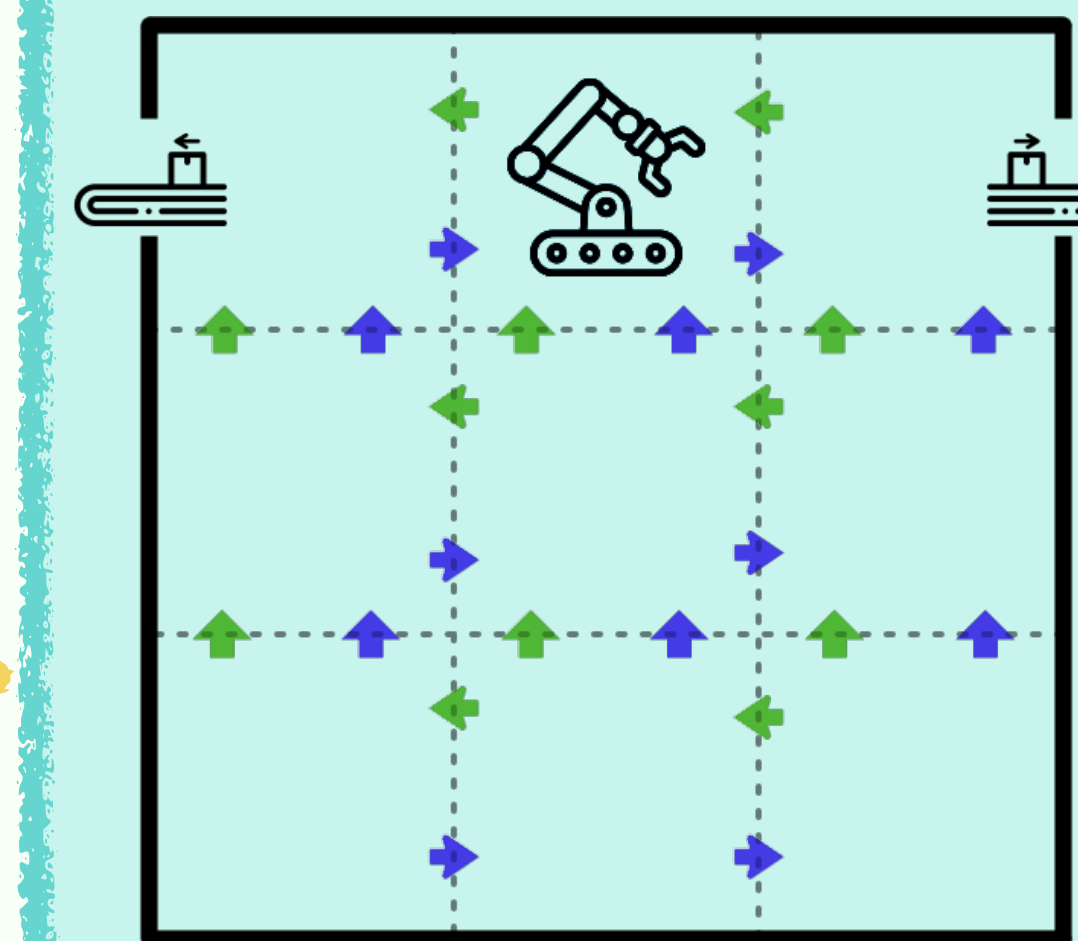
Assumption Templates^[1]



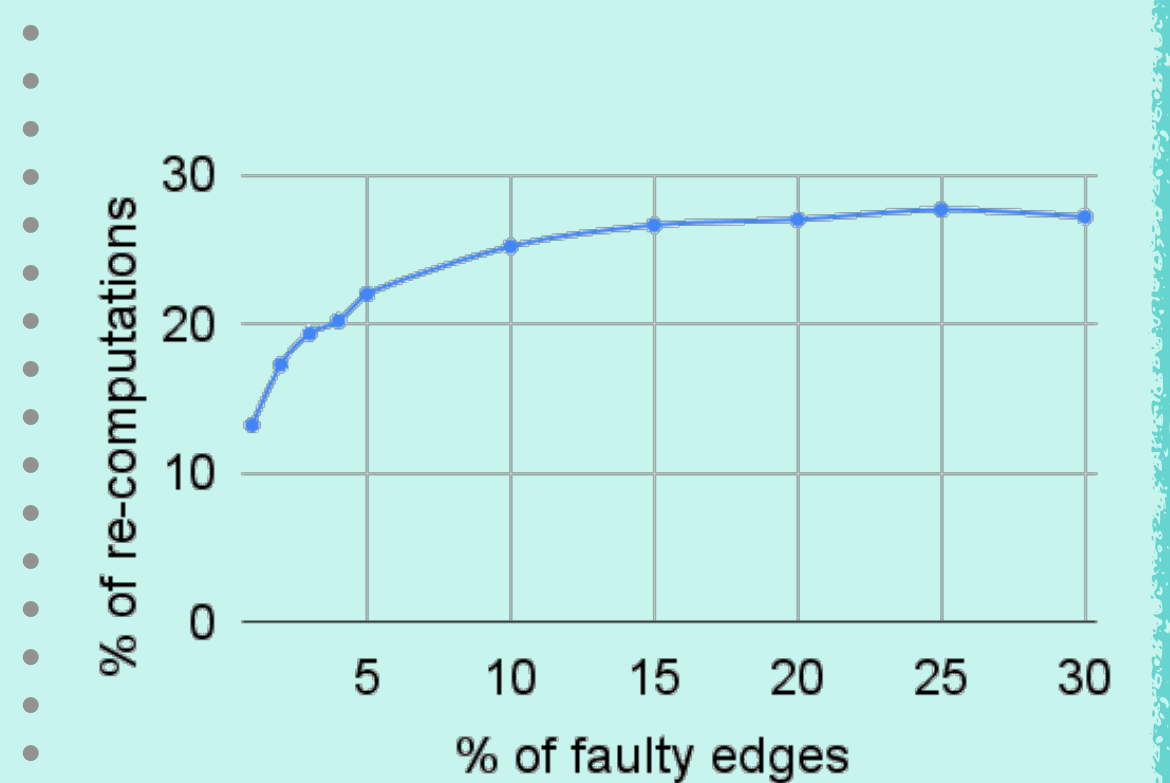
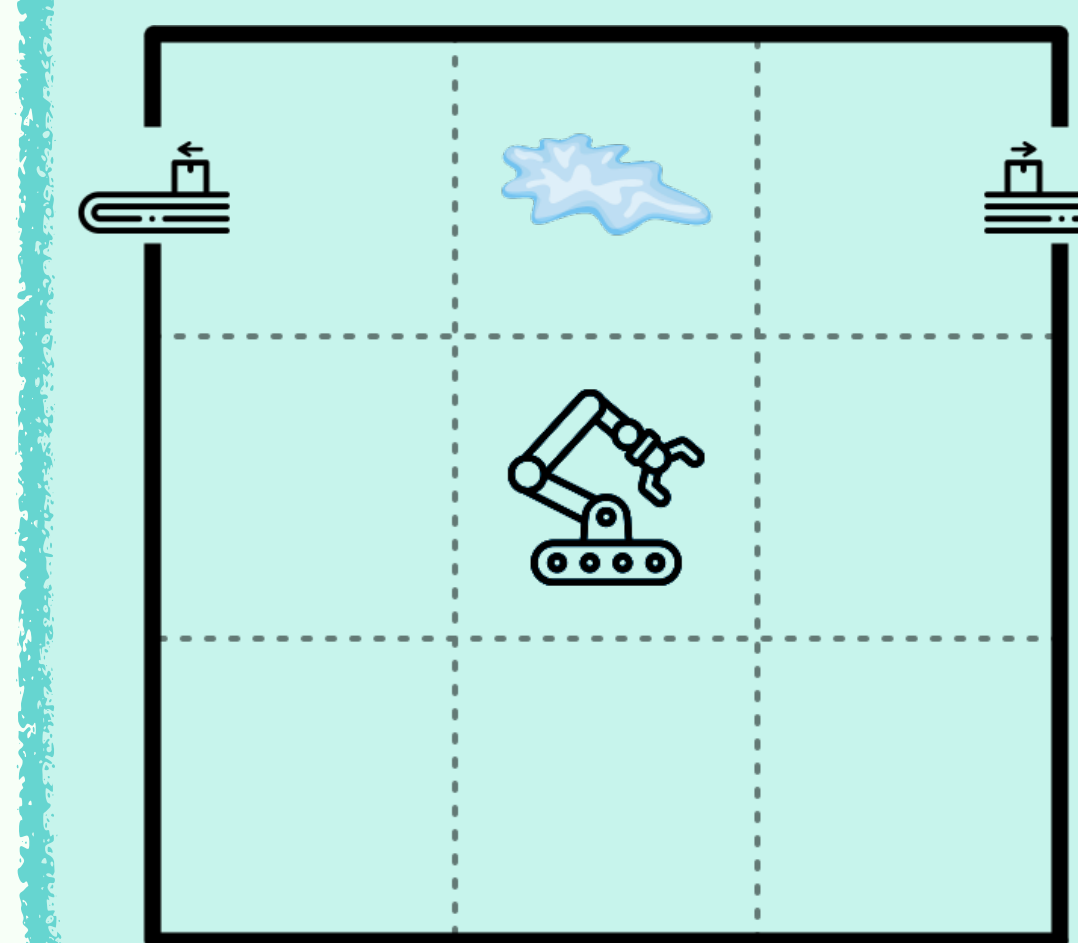
- Permissive for the environment,
- Computable in polynomial time, for any omega-regular objective
- Existing approaches require solving an NP-hard problem

Applications

Composition^[2]



Strategy Adaptation^[2]



Negotiation^[3]

