Integration mRUBiS with external Controller

Slides based on
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Machine Learning-based Control of Dynamical Systems

Requirements

- Launch mRUBiS
- Communicate from external process
- Observe mRubis states
- Assign the order of fix execution

Communication – observing states

Issues handled individually

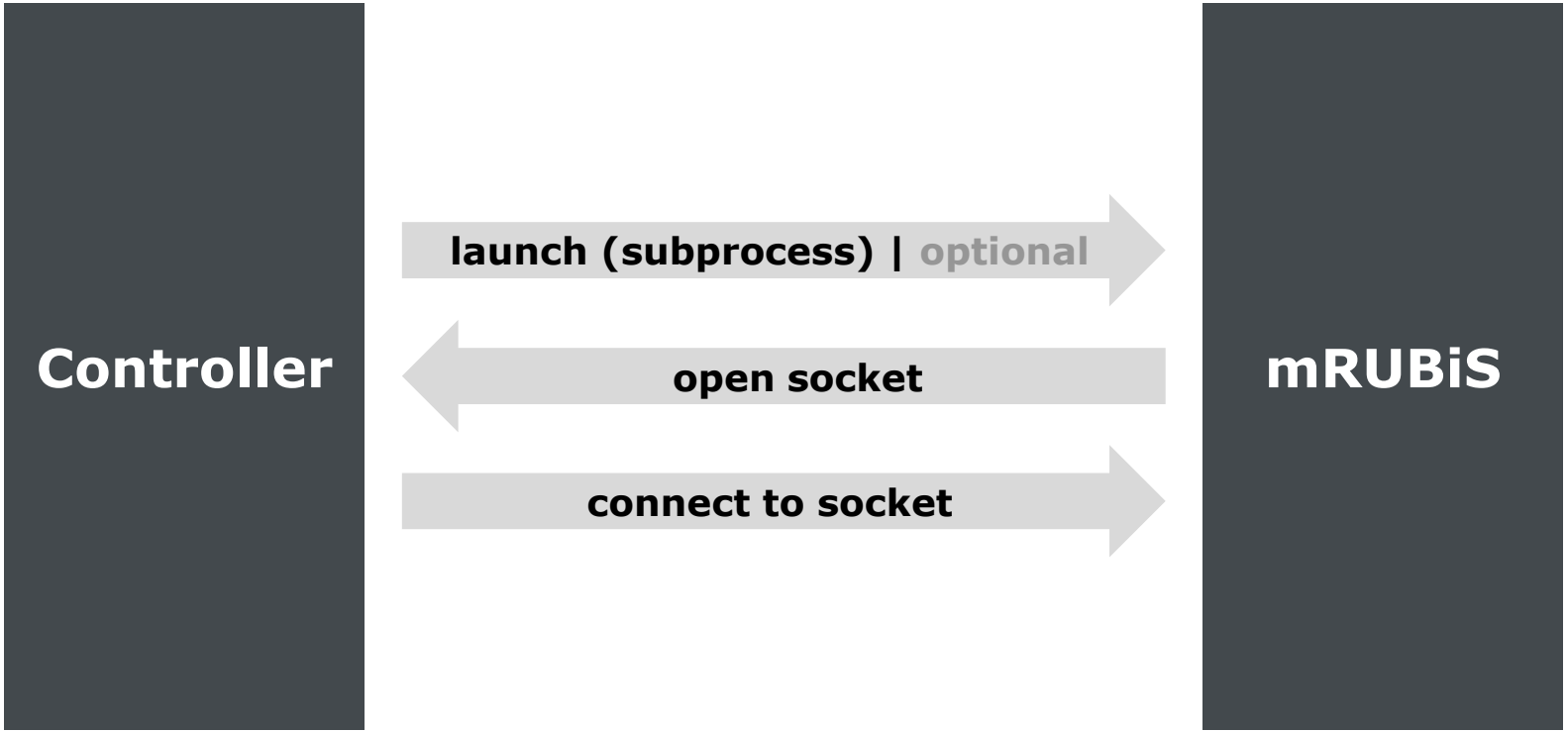
Encapsulation

Complex Architecture

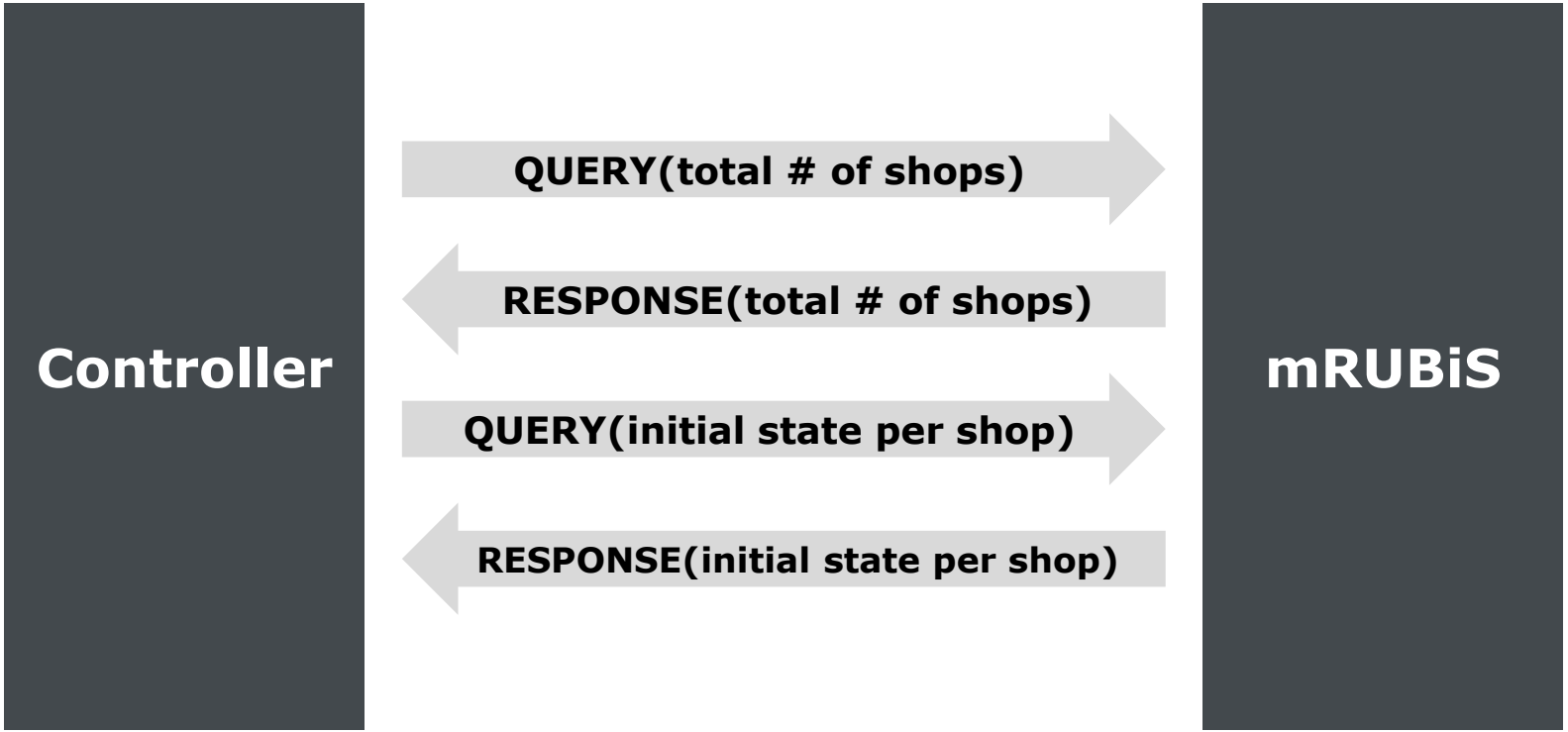
→ **quick solutions**:

- persist required data to disk (json)
- copy individual issue flow

Communication – initial connection

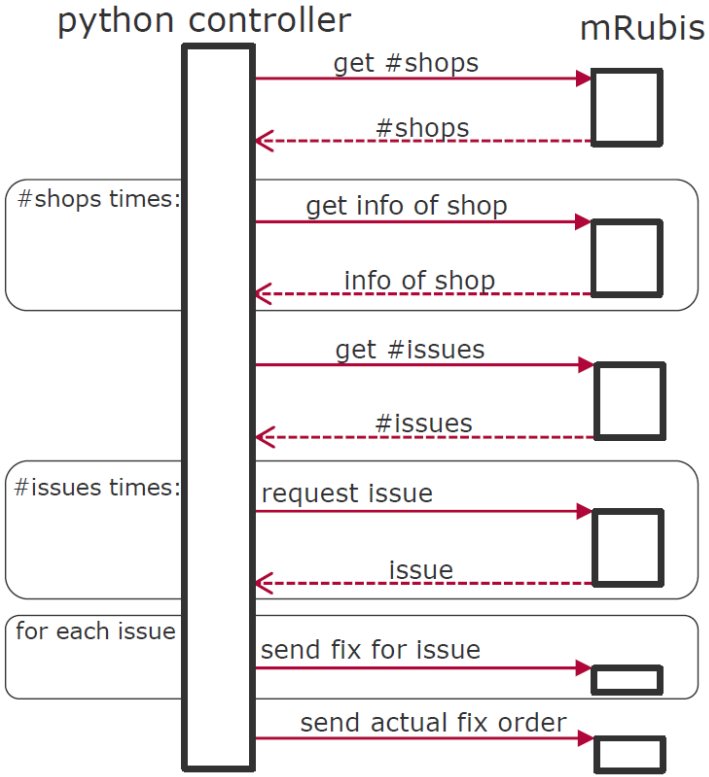


Communication – initial states



Communication – within run

Sequence Diagram



GitHub Repo:

https://github.com/hpi-sam/MachineLearningControl

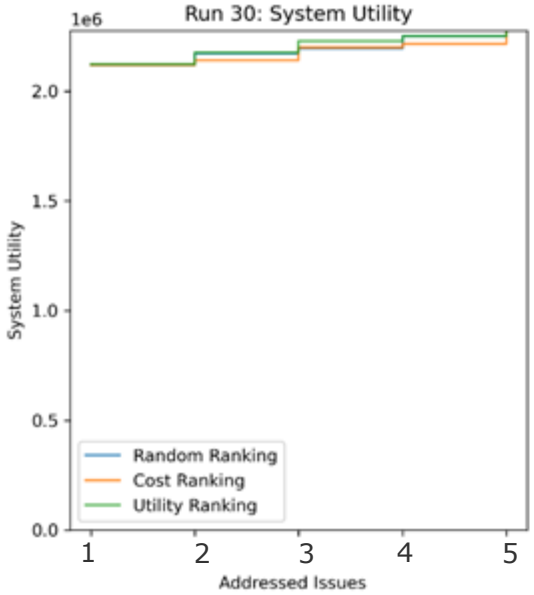
Executing Control Strategies

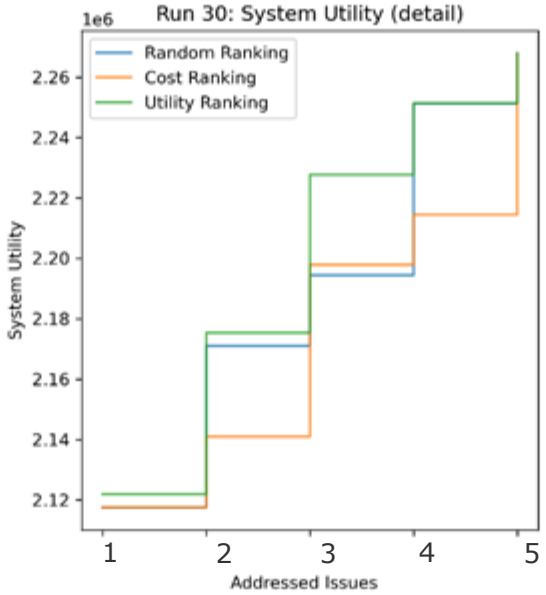
- Which action to take?
  - Compare available actions per issue
- Which issue to address first?
  - Compare components within and between shops

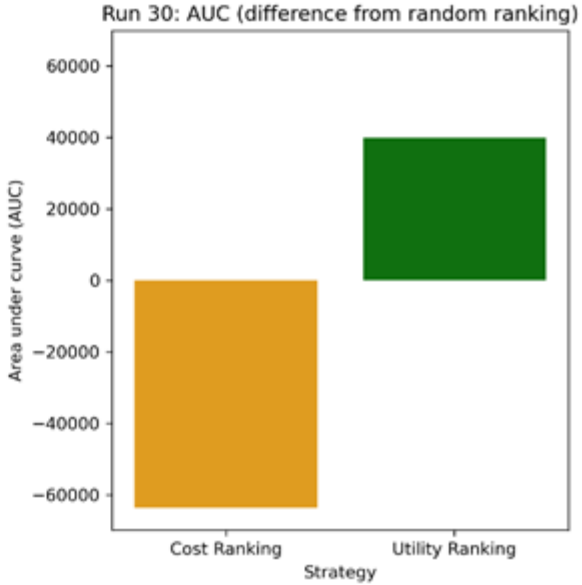
Three Control Strategies

1. Random issue ordering
2. Cost-based issue ordering
3. Predicted-utility-based issue ordering

Issue ranking – example run







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