

Technologies for Mixed-Initiative Plan Management for Human Space Flight

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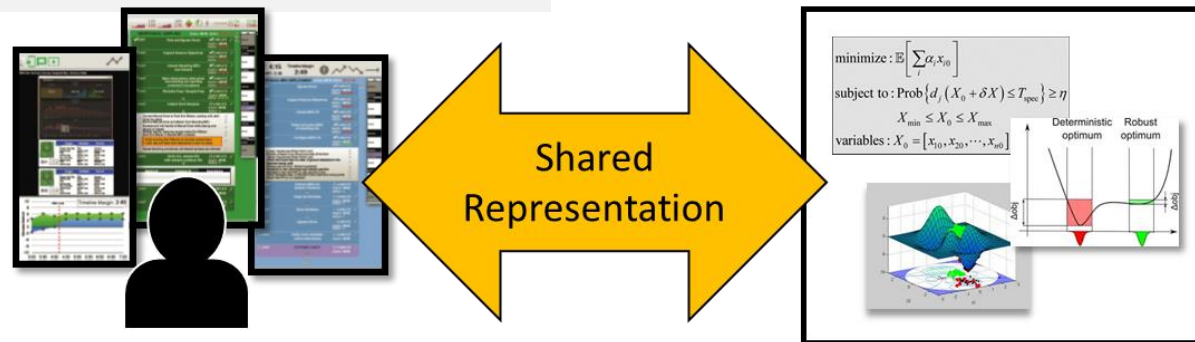
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Research Objectives:

1. Represent the work of planning to enable computation and visualization
2. Identify how the human should interact with the machine
3. Develop computational algorithms to monitor and adapt plans



Multiple forms of interaction

Multi-objective Optimization

Approach

- Tightly integrate the needs of the human planner with the machine's computational algorithms
- Create a common representation of the plan for machine and human planner
- Build on methods in cognitive engineering and operations research

Potential Impact

- A successful planning management tool will:
- Allow the crew to operate (semi-) autonomously.
 - Support the crew in achieving complicated mission goals while maintaining their safety
 - Support the crew in reacting quickly and safely in off-nominal situations