



Principles of AI Planning

Thesis and project topics

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What I am working on



Principles of AI
Planning

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Overview

Topics

Central Theme: Nondeterminism

Nondeterminism can come in different flavors:

- Agent vs. nature or Agent vs. agent
- Game-solving or game-playing
- Different goal conditions etc.

Orthogonal but related aspects

- Real-time
- Partial observability

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Main Algorithmic Approach: Heuristic Search

- **Heuristic search** algorithms (AO*, PNS, ...)
- Construction of **heuristics** (delete-relaxation, PDB, ...)
- **Theoretic examination** of heuristic functions



Topics

- **No completely elaborated topics, but some ideas:**
 - Heuristic approaches to strong and strong **cyclic** planning
 - Pattern selection for PDB heuristics in a nondeterministic context
 - Ideas from heuristic search planning applied to General Game **Playing** (thesis would probably be co-supervised by Thomas Keller (<tkeller@informatik.uni-freiburg.de>) and me).

How do we proceed?



If you are interested in a topic ...

- ... send me an e-mail:
`mattmuel@informatik.uni-freiburg.de`.
- We will meet and agree on the scope of your thesis/project.
- Later: regular meetings to talk about ideas, code, literature etc.