Seminar: Search and Optimization
3. Organization II

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Universität Basel

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3.1 Topic Assignment

3.2 Project

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Topic Assignment

09.10. Constraint Networks: Dario Maggi (Gabi)
16.10. Basic Inference Methods: Mihai Rapcea (Martin)
23.10. Look-Ahead Search: Fabio Tea (Gabi)
30.10. Look-back Strategies: Cedric Geissmann (Martin)
06.11. Directional Consistency: Martin Wehrle
13.11. Stochastic Search: Michaja Pressmar (Gabi)
20.11. Tree Decomposition: Mario Weber (Martin)

3.2 Project

Topics

- 2-person team per topic
  (in case of an odd number of participants one 3-person team)
- Possible topics
  - suggest your own constraint satisfaction problems, or
  - leave the choice to us
- Discuss your preferences with Gabi and Malte
- Topics should be fixed until October 16.
  Please contact us well in advance.

Roadmap

- Phase 1: CSP modelling exercises
  We will give you textual descriptions of problems that you
  should formally model as CSPs.
  Submission deadline: October 16
- Phase 2: Basic CSP solver implementation
  Implement a CSP solver for your domain with look-ahead
  search and two basic inference methods.
  Submission deadline: November 13
- Phase 3: Advanced CSP techniques
  Improve the basic CSP solver with advanced techniques
  (suitable for your specific problem).
  Submission deadline: December 11
- December 18: Presentation of project results in the seminar

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Proceeding

Implementation
- C++, Java, or Python (you also may suggest other languages)
- First strive for clean, readable code, then optimize it for
  efficiency
- Get feedback from your advisor frequently and already at an
  early stage (e. g. discuss your architecture before
  implementing it)

Proceeding

Evaluation

- ▶ Evaluate in phase 2 and 3
- ▶ Plan your experiments: What do you want to find out?
  How can you accomplish this?
- ▶ As always, you are welcome to consult your advisor

Submission after phase 2 and 3: Code, brief summary of evaluation results and what you have implemented.

Questions on project

Questions?