

Seminar: Search and Optimization

3. Organization II

Gabi Röger

Universität Basel

September 25, 2014

Topic Assignment

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)

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**

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**

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**

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**

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?