Planning and Optimization

A1. Organizational Matters

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Universität Basel

Organizational Matters

People: Lecturers

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Gabriele Röger

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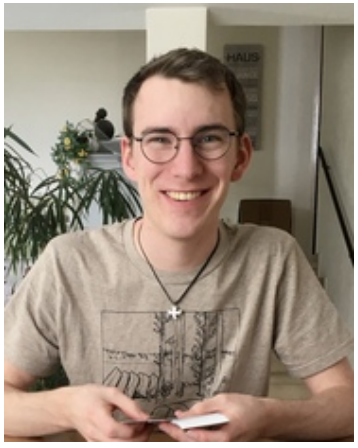
People: Assistants



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Target Audience

target audience:

- M.Sc. Computer Science
  - Major in Machine Intelligence:
    module Concepts of Machine Intelligence
  - Major in Distributed Systems:
    module Applications of Distributed Systems
- M.A. Computer Science (“Master-Studienfach”)
  module Concepts of Machine Intelligence
- other students welcome

Prerequisites

prerequisites:

- general computer science background: good knowledge of
  - algorithms and data structures
  - complexity theory
  - mathematical logic
  - programming
- background in Artificial Intelligence:
  - Foundations of Artificial Intelligence course (13548)
  - in particular chapters on state-space search

Gaps?

$\rightsquigarrow$ talk to us to discuss a self-study plan to catch up

We use Slido

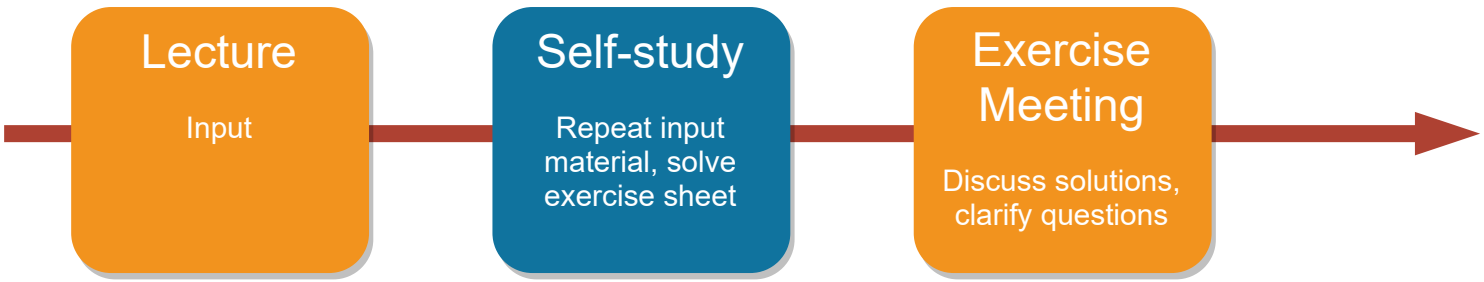
Join at slido.com

Enrolment

- `https://services.unibas.ch/`
- deadline: October 18
- better today, so that you get all relevant emails and access to the ADAM workspace

Flipped Classroom

Usual lecture week (we don't do this):



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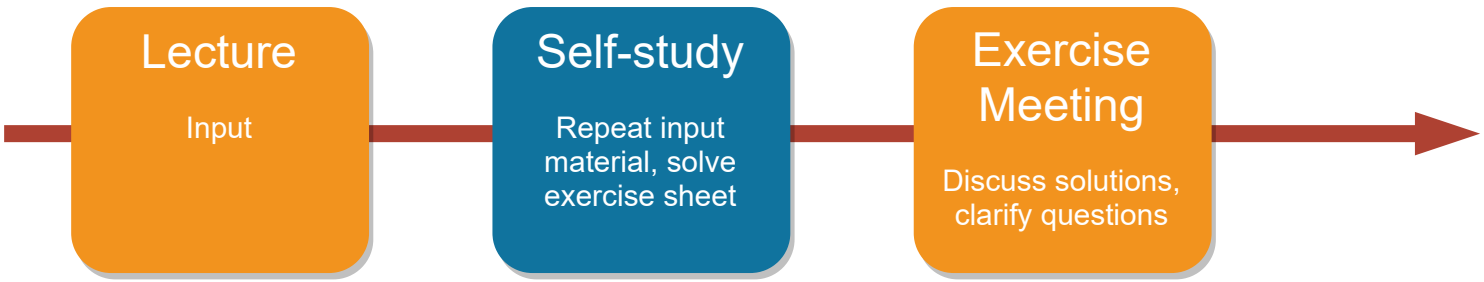

Flipped classroom:

Planning and Optimization Course on ADAM

ADAM

`https://adam.unibas.ch/`

- learning modules
- submission of exercise sheets
- model solutions for exercise sheets
- forum for announcements and questions
  (followed by lecturers and assistants)
- link to Discord server (for interaction among participants,
  but you also get answers from lecturers, assistant and tutors)

Plenary Meetings

- Wednesday 14:15 on Zoom
- with the lecturers
- bring your questions from the self-study phase
- on December 22: Q&A session for exam preparation

Exercise Sheets

exercise sheets (homework assignments):

- solved in groups of 3 students (note: $2 \neq 3 \neq 4$), submitted via ADAM
- project-oriented assignments
  - each exercise sheet covers one part of the lecture (typically 1.5–2 weeks = 6–8 chapters)
  - substantial in scope $\rightsquigarrow$ don't start too late
  - handed out at beginning of each part
  - work on these while we cover this part in the lecture
  - due Thursday after the end of the part (= the last plenary meeting on the part)
  - scope and marks proportional to covered topics
- mixture of theory, programming and experiments
- research aspects $\rightsquigarrow$ be independent, but ask questions!

Programming Exercises

programming exercises:

- part of regular assignments
- solutions that obviously do not work: 0 marks
- work with existing C++ and Python code

Exercise Sessions

Exercise Sessions (starting September 27)

Monday: 14:15–16:00

- group 1: Seminar room 00.003, Spiegelgasse 1
- group 2: on Zoom

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- discuss past homework assignments
- ask questions about current assignments (and course)
- work on homework assignments

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→ slido for first impression of preferences

Exam

- written examination (105 min)
- Wednesday, 26 January 2022, 14:00-16:00 (TBC)
- 8 ECTS credits
- admission to exam: 50% of the exercise marks
- final grade based on exam exclusively
- no repeat exam

Required Time

- 1 CP $\approx$ 30 hours
- The course has 8 CP.
- You need to invest about 240 hours.
- With 50 hours for exam preparation,
  this leaves 14–15 hours/week during the teaching period.

Required Time

How to distribute the 14–15 hours/week? – an example

- 6 hours self-study
- 2 hours exercises on Monday
- 2 hours plenum on Wednesday
- 4 hours additional time for homework

Plagiarism

Plagiarism (Wikipedia)

Plagiarism is the "wrongful appropriation" and "stealing and publication" of another author's "language, thoughts, ideas, or expressions" and the representation of them as one's own original work.

consequences:

- 0 marks for the exercise sheet (first time)
- exclusion from exam (second time)

if in doubt: check with us what is (and isn't) OK before submitting

exercises too difficult? we are happy to help!

Course Content

Learning Objectives

Learning Objectives

- get to know theoretical and algorithmic foundations of classical & probabilistic planning and work on practical implementations
- understand fundamental concepts underlying modern planning algorithms and theoretical relationships that connect them
- become equipped to understand research papers and conduct projects in this area

Course Material

course material:

- slides (online)
- no textbook
- additional material on request

Virtual Machine

- programming exercises:
  we provide a Vagrant virtual machine running Linux
  - setup: follow instructions in `virtual-machine-setup.pdf` linked on the course homepage under "Exercises"
  - you can do your own native setup instead (but no support!)
- we provide a Git repository with code to work with
  - this includes all demos used in the course

Your Next Steps

- until Sep. 26: solve exercise sheet Z
  - form a team for the exercises
  - get acquainted with the course infrastructure
  - set up the virtual machine
- until Sep. 26: watch recordings for A1 and A2
  (if you were not in the live meeting)
- Sep. 27: exercise meeting with introduction to PDDL
- Sep. 29: plenary session
- until Oct. 3: study learning module on parts A3 and A4

Under Construction...

- Advanced courses are close to the frontiers of research and therefore constantly change.
- We are always happy about feedback, corrections and suggestions!