Computational Game Theory (BE4M36MAS)

Introduction

Ondřej Kubíček, Tomáš Votroubek, Tomáš Kroupa,
Branislav Bošanský, Michal Jakob

Artificial Intelligence Center,
Department of Computer Science,
Faculty of Electrical Engineering,
Czech Technical University in Prague

branislav.bosansky@agents.fel.cvut.cz

September 20, 2022

Organization

During the labs, you will:

- practice the topic from the lecture: i.e., go to the lecture, download the slides, have general understanding what the lecture was about
- solve exercises (use definitions, algorithms from the lecture and apply them to specific cases)
- get and discuss homework assignments
- write a midterm test

Organization

Successful completion of the labs (zapocet):

- complete homework assignments
  - 1 assignment on extensive-form games (14p)
  - 1 assignment on cooperative games (12p)
- pass the midterm test (24p)

You need at least 25 points to pass the labs.

If you have 24 or 23 points, you can pass the exam but you need to get at least 26 (or 27) points from the final exam to pass the labs.

If you have any complication meeting the deadlines, talk to us (the sooner the better).

Computational Game Theory Course

What should you already know?

- Basic AI techniques
  - search (DFS), A*
  - search in games (minimax, alpha-beta pruning)
  - Bayes update, reasoning under uncertainty (MDPs, POMDPs)
- Optimization and Linear Programming
  - formalization of the problem as a linear program
  - duality and construction of a dual program
- Discrete Mathematics
  - permutations
  - discrete random variables

Use the first weeks to catch-up if there is something you are not familiar with.