Kickoff Meeting
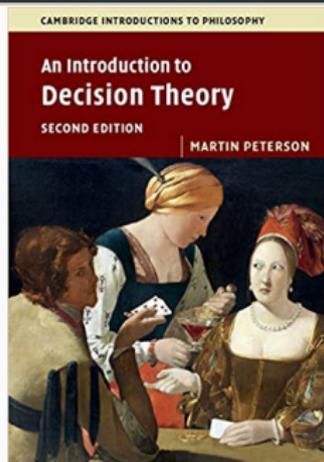
Seminar on Decision Theory

February 20th, 2023

Introduction

Outline

- **Kickoff / Questions** (today)
- **Topic Assignment / Questions** (end of week)
  - Everyone gets a topic to present (1-2 persons per topic)
- **First Meeting** (end of this month)
  - Open Discussion about Chapters 1 and 2
- **Weekly Presentations** (from week of 1st of May)
  - Two talks or one combined Talk per week
  - 30-40 minutes talk + 10-20 minutes discussion
- **Preparing Essay** (end of lecture period)
  - Summarize the main ideas, at most 8 pages, LaTeX
- **Optional Essay Deadline** (1st of September, 10:00)
  - Hand in via email

- May be found online?
- Goal: By the end of the seminar everyone should have read and understood the book.

The Topics

First Meeting

On the week of the 1st of May

Chapters 1 Introduction and 2 The decision matrix

- Formalization of decision theory

After reading the first two chapters, we will have a common discussion.

The presentations will start on the following week.

Topics

3: Decisions under ignorance

4: Decisions under risk (2 people)

5: Utility (2 people)

6: The Mathematics of probability

Topics

7: The Philosophy of probability

8: Why should we accept the preference axioms?

9: Casual vs. evidential decision theory

10: Bayesian vs. non-Bayesian decision theory

Topics

11: Game theory I: Basic concepts and zero-sum games (2 people)

12: Game theory II: Nonzero-sum and cooperative games

13: Social choice theory

14: Overview of descriptive decision theory

Outline of a Seminar Meeting

If you are presenting:

- Present a **selection** of topics of the chapter
- Stay within the time limits for your presentation
- Your presentation is for your peers
- Answer questions during the discussion round
- Conclude with a summary that encourages open discussion.

Advice for topic presentation

- Understand your topic!
- Some chapters have too much content to present it all
- Find good examples, carry them through the talk

Advice for topic presentation

When preparing the slides and presenting:

- Provide context
- Go slowly
- Keep the slides clean. Figures instead of a wall of text
- Use Beamer with LaTeX
- This presentation is a bit hypocritical

Outline of a Seminar Meeting

If you are not presenting:

- Read the chapter beforehand
- Write down questions/discussion points
- Follow the talk closely
- Participate in the following discussion
- You may be requested to ask a question to the speaker
- Give feedback to your peers (content/presentation)

Essay

- *Optional*
- Research beyond content of your chapter
- Deeper dive into your topic
- Connections to studies of computer science
- Additional literature research
- LaTeX mandatory
- Not more than 8 pages

- Do not simply retell the chapter!

Organisational Things

Meeting Times

- Regular Meeting $\rightarrow$ Mail
- Meeting on friday: 10:30 / 12:30 / 14:30 ?
- Meeting end of month 10:30 / 12:30 / 14:30 ?

Discussion Group?

Signal, Telegram, WhatsApp, ...