

Kickoff meeting

Seminar on Decision Theory

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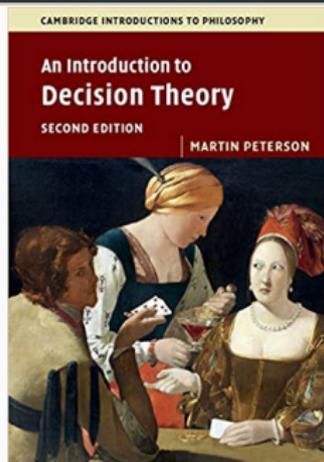
October 16th, 2020

Introduction

Outline

- **Kickoff / Questions** (today)
- **Topic Assignment / Questions** (early next week)
 - Everyone gets a topic to present (1-2 persons per topic)
- **Preparation** (at least two weeks)
- **First Meeting** (week of the 26th of October)
 - Open Discussion about Chapters 1 and 2
- **Weekly Presentations** (starting week of the 2nd of November)
 - One chapter per week (at most two talks)
 - 30-40 minutes talk + 10-20 minutes discussion
- **Preparing Essay** (end of lectures)
 - Summarize the main ideas, at most 8 pages, \LaTeX
- **Essay Deadline** (1st of March, 10:00)
 - Hand in via email

The Book



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

Meetings

Online meetings using Zoom.

Outline of a Seminar Meeting

If you are not presenting:

- Read the chapter beforehand
- Write down questions that you have about it
- Follow the talk closely
- Participate in the following discussion
- You may be randomly requested to ask a question to the speaker
- Give feedback to your peers

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 should be understandable to the audience, including all of your peers
- Answer questions during the discussion round

Possible Structure of a Presentation

- Briefly introduce the topic
- Motivation: Why is it interesting? What are typical applications?
- Give necessary background knowledge. What techniques are used?
- Present the topic
- Conclude with a summary that encourages open discussion. What are some open problems?

Advice for topic presentation

Before you begin:

- Understand your topic, look at the sources
- Outline your talk. Select the topics of your focus
- Find good examples
- Find possible questions and open topics for discussion

Advice for topic presentation

When preparing the slides and presenting:

- Provide context. Make appropriate references to previous talks/chapters
- Go slowly. Do not expect everybody to understand everything immediately
- Keep the slides clean. Usually one figure is better than a wall of text
- Use simple examples to illustrate ideas. Sometimes a good example is better than presenting a proof
- Use Beamer with \LaTeX
- This presentation has too busy slides

Resources on presentation

- Many available, e.g.,
<http://ianparberry.com/pubs/speaker.pdf>
- Learning by doing... and from the mistakes made by others!
- Practise, practise, practise!

Essay

- Feel free to use the same structure as for the presentation
- \LaTeX is mandatory (tutorial:
<https://www.latex-tutorial.com/tutorials/>)
- 8 pages
- template is available on our website
- Give appropriate references (not only the chapter but also original papers)

But:

- Do not simply retell the chapter!

Discussion Group?

Telegram, WhatsApp, ...

The Topics

First Meeting

On the week of the 26th of October

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.

3: Decisions under ignorance

4: Decisions under risk (2 people)

5: Utility (2 people)

6: The Mathematics of probability

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

**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

Decide on presentation day
