

Bayesian Machine Learning

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The course idea

- The idea is to discuss a few topics in Bayesian ML. For example:
 - (Deep) Gaussian Processes
 - Bayesian Neural Networks
 - Generative models (autoencoders, flow based)
 - Neural Processes
 - etc.
- The exact syllabus is under development.
- The course will be structured around research papers.
- Roughly speaking, two lectures per paper: one devoted to the theory of the paper, the other to the implementation.
- Homeworks will be about extending the implementations.

The course idea

The course will consists of three parts:

1. First 2-3 lectures will be an introduction to Python for machine learning (most common language in this field). Tentatively, we plan to use Jax and/or PyTorch.
2. The main part of the course will cover 6-8 papers (i.e. topics) depending on how much time we have.
3. In the final few lectures, the students will present papers on their own in small groups (we will suggest some or the students can pick the ones that are interesting to them).

Exam and credit points

- There will be an oral exam in the end of the course. The final grade will take into account the paper presentation and the oral exam.
- The course will be 6 SWS (9 ECTS): two lectures and one tutorial per week.
- It is an elective course and it is aimed at master's students in statistics and data science.

Schedule

Lectures:

- Tuesday, 14—16, M/E 25
- Thursday, 14—16, M/E 21

Exercises:

- Tuesday, 10—12, CDI 120

Exam dates TBD.

Thank you!

If you have any questions or suggestions, we'd be very happy to hear from you! Please write to

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