Bayesian ML: project topics

Julyan Arbel, Rémi Bardenet

February 3, 2021

1 Nature of the project

Students should form groups of two to three, each group undertaking one project. We suggest in Section 4 a few scientific papers that can each lead to a project, but you can choose another paper, subject to our approval.

For the paper your group will have chosen, you should: (1) explain the theoretical, computational and/or empirical methods, (2) emphasize the main points of the paper, and (3) apply it to real data of your choice when applicable. Bonus points will be considered if you are creative and add something insightful that is not in the original paper: this can be a theoretical point, an illustrative experiment, etc. The whole point is to read the paper with a critical mind.

2 Assignment of papers

As a first step, we ask each group to fill the spreadsheet at

https://lite.framacalc.org/9ll3-bml

with the title of the paper, a link to it (if available), and the composition of the group. We ask that you fill in the form **before March 5**.

3 Format of the deliverable

You can use either Python or R for the programming part. Please have each group send

- one report as a pdf (≤ 5 pages) in the NeurIPS template,
- the link to a GitHub or GitLab repository containing your code and a detailed readme file with instructions to (compile/install and) run the code.

to both teachers[1] **no later than March 22**. There will be no deadline extension.

4 Proposed papers

Lecture on Bayesian nonparametrics

Lecture on Bayesian deep learning

[1] if the above link is broken, this means: julyan.arbel@inria.fr, and remi.bardenet@gmail.com