STAT 254 Modern Statistical Prediction and Machine Learning **Spring 2023**

Semester Project: Proposal due April 3

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The format of the semester project is inspired by the projects for CS289A at UC Berkeley and CS229 at Stanford

Some key aspects of the project:

1. The project can be performed by a group of up to three students. If you want to work in a group, you should arrange your team by yourself. If there is more than one participant, the authors should report in the cover letter what the contribution of each individual participant is.

2. Feel free to discuss your potential project with the instructor and GSI during Office Hours before the submission of the initial proposal.

3. The initial proposal is a short text explaining the basic principles behind your project: Why is it interesting, what data is used, what methods are applied, mention if you have already performed some of the steps/visualizations and so on. Initial proposals are submitted through Gradescope (they are not scored).

Note: You may use a topic closely related to your current research, but it should not be exactly the project you are working on now.

General ideas for projects:

- Revisit the existing research paper. This includes reproducing the experiments and discussing the results. Please be aware of computational limitations if your computer compared to what resources are used in respective papers.

- Perform your own research project. To see how the final project might look like, check the examples of final reports.

Format of the final project:

- An up to 8-page report using the standard NeurIPS (stands for Conference on Neural Information Processing Systems) template.

- A 3-minute video presentation of your main findings. This can be recorded via the built-in video capture of ZOOM. The video can be uploaded either to YouTube or to the shared "Berkeley-only" Google drive folder.

Some ideas can be found here:

- Berkeley CS289A
- Stanford CS229
- MIT
- Stanford projects for Deep Learning for Computer Vision. These files can be used as examples of how the final report might look like.
- Machine Learning conferences like NeurIPS, ICML, ICLR can provide a good idea of how modern research papers look like in this field.