# FORM 2B – PEER REVIEW FORM RESEARCH MASTER'S THESIS RESEARCH PROPOSAL

Title of research project:      Assessing the performance Occam's window for Bayesian model averaging

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Peer reviewer name:      Bence Gergely

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Write a *one page* review about the project-proposal of your fellow student. At least include the following points in your peer-review:

## *(1) Summary of project*

The present proposal is about model selection and more specifically how to address the uncertainty regarding this selection. When the possible number of models is enormous, one need to use heuristic model search procedures. Occam's window is one these methods. The goal of this project is to assess the performance of Occam's window for different model selection problems like linear regression, logistic regression and most importantly graphical models.

## *(2) Good things about the proposal (one paragraph)*

1. The project is especially interesting. It is addressing a very relevant issue, with real life relevance. The proposal is generally well-written: the summary helps a lot to understand the intricate points in the introduction and to focus on the relevant things. Both the visual and the writing style of the proposal is very enjoyable.

## *(3) Major comments*

1. You assume a lot. You mention a dozen of different mathematical methods. It is not clear which are important for the projects, and which are the ones you mention to illustrate the full body of the literature. It would be great if you somehow emphasize the relevant methods.

2. The Procedure is a bit too vague.

## *(4) Minor comments*

1. When you are introducing a new topic, it would be good if you first build the intuition. Example: "The second method is model stacking, which minimizes the leave-one-out cross-validation (LOOCV) estimate of a loss function to assign weights to different models (Wolpert, 1992)". This sentence contains too much information.
2. In the beginning, notation is hard to understand, please explicitly define each variable you are using.

3. EQ5 is hard to understand. It might help if you do not break sentence with the equation.

4. Plus points for Julia programming language :D

## *(5) Recommendations*

1. Although you mention that the project is exploratory, you could provide a few metrics with which you will assess the performance of the simulations.

2. Similarly to 1) it would be great if you could provide an outline on how you are going to generate data under the different models (at least for the simpler ones).

3. It would be a nice addition to compare your method with other methods on real datasets. (I know that you will have enough work with the simulation, but still, it is an interesting addition.)