

Study Guide 2 – Language Models

September 23, 2020

General Criteria

- Each session should be *synchronous* (i.e., you must all be online at the same time).
- Each session should last at least 30 minutes.
- Each session should have between **3 – 6** students.
- Each session should be on a different week from another session; you shouldn't do all the summaries on the same week!
- It is recommended to hold a video chat. However, in case that this is not possible, you can agree as a group to hold a voice chat only for some or all participants. In case that this is also not possible, you can agree to instead have a synchronous written discussion.

Suggested Discussions

1. **Moderator and introduction** – make sure you have a moderator for the discussions, and any new members to the study group have a chance to introduce themselves!
2. **Finish the derivation** of using relative frequencies for MLE for categorical random variables where $k > 2$ together.
3. **Diagnosing underfitting and overfitting** - the lectures presented the issues of underfitting and overfitting of models onto a dataset. Discuss in your group how you might be able to diagnose these cases in experiments. Think in particular about how you would expect the performance trends to be in the training, development, and test sets in each case.
4. **Chat about A1** – how have you been finding assignment 1 so far? Any difficulties to discuss? (Remember that you're encouraged to discuss issues in general, but don't share code or parts of your written report!)
5. **Questions about course so far** – are there any questions from the course (lectures, quizzes) so far that you'd like to discuss? Any definitions, derivations, or examples that are confusing that you'd like to go over together?
6. **Plan** – make a plan for your next study group! Should you get together to watch a lecture at the same time? When should it happen? Does anything need to change in terms of how you conduct the session?

Format of a Summary

Use the following format for each summary:

Name:

Student number:

Time and date of meeting (include start and end times):

Week #:

Other students at the meeting:

Brief one- to two-paragraph summary of your activities and discussions.

The entire summary is expected to be between half a page to one page.

- These summaries should be handed in **individually**.