CS-397: Seminar in Large Language Models
Final Project

Spring 2025

Description: For your Final Project your project group will prepare a short semi-novel research paper. The topic should be related to the material covered in class and must be approved by the instructor. Generally, this means that the paper should focus on embedding spaces, large language models or associated natural language processing tasks. Topics are often related to the papers presented by the group, although this is not a requirement. Topics inspired by papers covered later in the quarter may require reading ahead.

Projects should be scoped such that they can be executed before the end of the quarter. Using an existing code base is okay (and even encouraged), with the expectation that you (i) need to modify the code in some way to accomplish your task, (ii) you extend the analysis of results produced by the code, or (iii) that you implement your task with a unique presentation of data to the model. Replicating results of an existing research paper is not an acceptable project. It is not a requirement that you achieve positive results for your task. A thorough analysis of negative results is sometimes more instructive than presenting positive results. You can use whatever deep learning platform you prefer. Code will not be evaluated or graded.

Project deliverables will be phased as follows:

Project Proposals (5.0 pts): Due Date, Wednesday, May 7th

Please prepare a proposal for your Final Project. The proposal should include:

- a clear description of your proposed project,
- the rationale for undertaking this project (why is it valuable research?),
- the source and description of the data set that you will use for the project,
- a description of the model used for your analysis, including equations and/or architectural diagrams,
- a description of the task that you will use to evaluate your model,
- the evaluation metric(s) that will be used to measure performance, and
- a description of the benchmark(s) that you will compare your results against.

Please limit submission to less than two pages, including tables, graphs, figures, etc. Separate meetings (optional) may be scheduled to review proposals and to provide feedback.

Final Paper (20.0 + 3.0pts): Due Date, Monday, June 9th
(Note: 1.0 bonus point will be awarded for each day early up to a maximum of 3.0 points)

Please submit a write-up of your final project in the style of the papers covered in class. This generally includes an abstract and sections for an introduction, related work, the model, data set/experiments/results and an analysis of results/conclusion. The paper should be a maximum of four pages in length and conform to the ACL style paper template which can be found at https://github.com/acl-org/acl-style-files. The paper should be entirely self-contained including tables, diagrams and illustrations. External links will not be followed. You may include a short list of references as a fifth page, but this is not required.

What to Turn In: For each deliverable, you are required to turn in a single PDF file before the due date listed in Canvas. Please adhere to page limits -- extra pages may not be read. Submission of Preliminary Results is optional and can be made at any time.