CS97 Replication Project Guidelines

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Groups and Topics **Due: Friday, 10/9**

Notify me by email of your intended group and topic. Groups should be 2–3 people—two is preferred. If you need help finding a group, please let me know as soon as possible. Your intended topic could be a paper that you would like to replicate, or a general area you would like to work on. I will help you refine your ideas before the proposal deadline.

Proposal **Due: Wednesday, 10/28**

Your project proposal should be roughly 2 pages, typeset in LaTeX, with 10pt font and margins set by `\usepackage{fullpage}`. The core of the proposal is a detailed description of the experiment(s) you plan to re-implement or the theorem(s) you intend to re-prove. For experimental projects, this should include a clear statement of the experiment's hypothesis and how your replication will test it. For theoretical projects, you should state clearly what assumptions you will begin from and outline the path to prove the theorem. For either type of project, you should explain the importance of your theorem or experiment in the paper where it appears and within that paper's field. You should also discuss methods you will use to test your results. The proposal should mention any extensions you plan to undertake, such as additional experiments, comparison to other papers, or substantial literature review.

Each group must schedule a half-hour meeting with me before the proposal deadline. The suggested time for this meeting is during lab on 10/19 or 10/26, but if you will be here over fall break, an earlier meeting could be arranged. Proposals will be submitted through Moodle.

Checkpoint **Due: Monday, 11/22**

For the project checkpoint, you will submit a very rough, approximately 4-page draft of your final paper, with some sections missing entirely. The full specification of the format appears below in the Final Paper section. The checkpoint should include introductory material and explanation of the experiment from the proposal. The checkpoint must also have a complete related work section and accompanying bibliography that explains in much greater detail how your project fits into the field. This should include both the context from the paper you are replicating and its bibliography, as well as more-recent papers that build on it. Your related work should cite at least two papers that preceded the one you are replicating and at least two that followed it. In addition, the checkpoint should describe your implementation or proof to the extent that it has been completed, and give a rough outline of your updated plans for testing and extension.

Each group must schedule a half-hour meeting with me before the checkpoint deadline. This meeting should happen during lab on 10/9, 10/16, or 10/23. Checkpoint submission will be through Moodle.

Presentation **In Class: 12/1 − 12/8**

You will give a 20 minute presentation about your project with an additional 5 minutes for questions. Each group will be assigned a time to speak during class after Thanksgiving. Some experiments, data analysis,

or proof details may still be in-progress at this point, but you must have some preliminary results to report. Each group member should speak for an equal portion of the time. If you want feedback on your slides before you present, you should schedule a meeting and send them to me at least a day in advance.

Final Paper Due: Thursday, 12/10

The final paper should be 7–8 pages and should contain at least the following sections:

Abstract: 200-300 word summary of your paper.

Introduction: You should describe both the paper that you are replicating (What was it trying to achieve? What was its significance?) and what you hope to achieve by replicating it (What portions of the paper's description are incomplete? What scientific questions did it leave unanswered?).

Related Work: This should require only minor editing from the checkpoint submission.

Replication: Describe the work you have done to accomplish your re-implementation. or re-proof. There should be enough information provided so that someone else could reproduce your reproduction.

Results: Explain the results of your replication. What portions of your results align with the original paper's, and what parts don't? What tests did you do to verify your results? Were you able to deduce anything that was left out of the paper? Were you unable to replicate certain things

Discussion: What is the significance of your replication? What would be the next step in continuing this project?

If your project included an extension, it should be described in its own section.

Grading

Credit will be assigned to the project requirements as follows:

Proposal 15%

Checkpoint 15%

Presentation 30%

Final Paper 40%

Your grade will not be based on whether or not your replication succeeds. Negative results are also useful, especially if they reflect areas where the original paper requires improvement. Your grade will be based on the design and execution of the project as well as the thoroughness and comprehensibility of the presentation and paper. You do not need to turn in any programs.