

Machine Learning (CS 135)
Final Essay (50 points)
Due by 11:59 PM, Saturday, 18 December 2021

The final project will consist of a short paper, tying some use of machine learning technology in the world to things learned over the course of the semester in class. A successful essay will fit the following criteria:

- **Goal:** You are going to find something that interests you, and explain it. The essay should explain, as clearly as possible, some machine learning technology or application of such technology. A reader who has taken our course should be able to understand the basic ideas of what is being done. You don't need to explain every technical detail of algorithms and the like, but you should give a good sense of how things work, what techniques are in use, etc. If the ideas being used are related to ones we learned about in class, discuss this a little.
- **Format and length:** The essay should be typed, double-spaced, with 11–12 point font. It should be submitted in PDF format. Total length, *not including* references and figures, should be 5–7 pages.
- **Research element:** Your work should be based upon *no less than* 5 sources, which may include relevant chapters or sections of the various texts used in the class (you are encouraged to go beyond those sources). Citations should be given for any content used or quoted, and references should appear either in footnotes or as a separate section at the end of the essay. Try to use original sources when you can; it is fine to start with some web search and some Wikipedia browsing, but go beyond that. Note, for instance, that most serious Wikipedia articles have extensive references to scientific papers, books, etc., that are the sources of much of the information summarized in those articles. In general, prefer published original work to blog posts and summaries found online.

Cite all original sources used. Use a standard format, consistently, throughout. Remember that it is okay to paraphrase material from other sources, as long as you cite those sources. Similarly, if you take directly from other sources, then indicate this, by quoting and citing those sources.
- **Grading:** Your work will be graded on clarity and completeness. Proper use of multiple sources will be expected, as will correctness of spelling and elementary grammar/punctuation. (A more detailed rubric can be found at the end of this document.)

Handing in the work: You will submit a PDF of your work via Gradescope. The usual late policy applies. Make sure to verify that the work uploaded, or be sure to watch for alerts via email if it is not received by the 72-hour late deadline.

Sample essay: An example of the sort of essay expected is included with this document. Use this as a guide to the level of detail, use of citations, and approach that is expected.

Grading Rubric

The essay will be graded based upon the following requirements, in descending order of importance:

1. Research element (17 pts.):

- (10) Does the paper use quality sources (preferably original research), and cite them properly?
- (5) Are the sources relevant to the material discussed?
- (2) Are the sources correctly listed, either in footnotes, endnotes, or separate bibliography form?

2. Expository and analytic element (30 pts.):

- (25) Is the explanation of the technology/problem/application clear and correct?
- (5) Is the content well-organized?

3. Style (3 pts.): Is the essay written grammatically, free of spelling errors?