Midterm Exam

CS 697 (*Equity and Discrimination in Computing Systems*), Spring 2020

LOGISTICS

This is a take-home exam. It is due **midnight, Tuesday, Feb. 18**. E-mail your response to the instructor. There is no class on Tuesday.

You may discuss clarifying questions about the exam or paper in the course Slack channel.

PAPER

For this exam, read the following paper:

> Maria De-Arteaga, Artur Dubrawski, and Alexandra Chouldechova. 2018. Learning under selective labels in the presence of expert consistency. In *FAT/ML 2018*. arXiv:1807.00905v2.

For additional background on the project, see Dr. Chouldechova's FAT* 2018 talk.

RESPONSE

Write an essay at least 1.5 pages long, but no more than 3[1], answering these questions:

1. What problem is this paper trying to solve?

2. Why is this a problem? What problem does it create for training or evaluating a statistical model?

3. Which of Mitchell et al.'s assumptions and/or Barocas and Selbst's data mining discrimination points does this work deal with?

4. What is the key idea of their proposed solution?

5. What do they claim about the effectiveness of their solution?

6. What assumptions does this work make? How might those assumptions be false?

7. Where in a system using this method could unfairness arise? How, and by what definitions?

8. How might you apply this work to a lending decision application, where the goal is to predict whether a loan applicant will repay their loan?

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[1] Page counts are single-spaced 12-point Times or Times New Roman

R U B R I C

Components will contribute to your grade as follows:

- 10 points each for questions 1-5 and 7

- 15 points for questions 6 and 8

- 10 points for writing

The following rubric will guide grading of covering the questions:

- **Exemplary.** Provides a clear answer to the question, supported by appropriate evidence or argumentation and justifiable in the context of the paper and class.

- **Good.** Provides an answer to the question that is correct or justifiable, but either the answer or its basis may be less than clear or have small gaps in logic. May make some unsupported or moderately excessive claims.

- **Needs Improvement.** The answer is difficult to understand, unsupportable, or not grounded in what the paper actually says and claims; essay makes substantial claims not supported by paper or class knowledge.

- **Unsatisfactory.** The question is unaddressed, or the answer is not discernibly connected to the paper's claims and argument.

I will use the following for assessing writing:

- **Excellent.** Addresses the requirements in a clear, rigorous, and well-organized manner, such that the key messages are clear and well-justified. Free of grammatical errors.

- **Good.** Addresses the requirements and can be understood with reasonable effort, but may have some disconnected flow of argument and minor grammatical errors.

- **Needs Improvement.** It is possible to understand the argument and answers to the questions, but only with significant effort. Logic is disconnected and difficult to follow, and/or there are significant or pervasive writing errors.

- **Unsatisfactory.** The meaning and argument of the paper are entirely unclear.