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CSC 591 – Sinless Software Engineering
End of Term Report and Feedback

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Overview:
This class is awesome. I love this class because it touches the concepts that are often overlooked as a software engineer. Bias in software engineering field could affect the lives of many, and it is important for us as a future engineer to acknowledge and do something to reduce bias and unfairness. Dr. Menzies did a great job in bringing the class to life, he is passionate to teach us about the concepts of bias and fairness in software engineering.

Responsible Conduct of Research:
I suggest we go over what it means to design ethical research so that students will learn that ethical AI starts with ethical research. Perhaps a lecture session that address RCR would be a great way to do this.

Discussion on Cultural and Institutional Contexts and Incentives that Promote Ethical STEM Research and Practices:
We should talk not only about the research that is done in the US, but also research from other countries. We could discuss about the ethical emphasis among these papers/research and students could discuss how to build a research environment that promote ethical practices

There are couple of suggestions I would like to make, and I will separate my suggestion based on the assignments that we have done in the past:

1. **Homework:**
   a. The homework did help me understand the concepts better while at the same time helping me learn software tools and techniques used in development of a machine learning
   b. The documentation for the homework should be a bit more structured. I sometimes find it hard to understand what we are supposed to do in a homework because some steps are ambiguous.
   c. Use pseudocode on the homework instructions. At first, I find it hard to understand the Julia code in the instructions because I have zero experience with the language. I suggest that the code should be written as general pseudocode to make it easier for students to implement it in any language.
   d. Create a visual representation of the algorithm. There are some visuals that explains the FFT tree, but I sometimes still confused on how each code works in relation to the bigger picture.
2. **Class Lecture:**
   a. Use presentation tools such as power point to make it easier to understand a concept. In my opinion, using the GitHub Readme is not that great because my mind becomes distracted with different kind of information. Dividing each concept into a sizeable chunk of slides could help us learn easier
   b. I like to have more breakout session discussion because it helps us learn from each other. It also gives us more confidence in talking to the whole class

  c. I like that we have case studies that give us example of the real-world bias in the software system that our society use. Perhaps we could have more interactive case studies such as documentary to make it more exciting.

  d. I like that we have some guest lecturer such as Joy. He inspires us to learn about fair AI and how as a software engineer, we could contribute to the effort of makings AI more fair.

3. Final Project

  a. I was unsure at first when the final project for this class will be writing a research paper. As a master student who wants to go to the industry, I am more interested in the practical project. However, this class has taught me that hard work and perseverance does matter, and I am happy to be able to learn how to write research paper despite having no prior experience

  b. I suggest that you give us more lecture about how to create research question and to design good experiment to answer the question, for I sometime having a difficulty of understanding how the research process works.

  c. Another option is to give students an opportunity to choose between a research-focused final project as well as more practical final project. For example, a student could propose changes to an open-source AI repositories and model, which could be more interesting for students who want to work in the industry

Overall, thank you Dr. Menzies for teaching us this important subject. I hope my comments and feedback above could be used to make the class better for future students.

Example of Week-by-Week Lesson Plans:

	Week	Plan
	Week 1	a. Class overview and expectation. Go over overview of homework and final project. **Introduce the concept of ethical research in software engineering**
	Week 2-7	a. HW: Like FFT trees implementation. Give students some background and go over the algorithm b. Overview of ethics and bias in software engineering. Go over important research paper and invite guest speaker to explain their research. c. Watch documentaries and read case studies
	Week 8	a. Go over final project overview and help students to design research question that they want to answer.
	Week 9	a. Train students on the skills and techniques necessary to do research such as: 1. More emphasis on how to do data visualization and statistical analysis 2. How to design an experiment 3. How to do literature review
	Week 10-14	a. Students will do experiment and write their report b. Weekly check-in the class to help students if they struggle in the research process.
	Week 15-16	Final report presentation, report paper and feedback form is due.