UNIVERSITY OF CALGARY

Nathan Ante's ENSF 444 Assignment 1

Course: Machine Learning - ENSF 444

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1. What does AI Ethics mean to you?

When discussing AI ethics, what comes to mind is the moral practices and considerations when it comes to using artificial intelligence. I find that it is an important aspect to consider whenever the use of AI is involved as it is a very powerful tool that can be used for both good and bad. AI is powerful and can be quite capable when implemented properly, when using AI we must ensure that it is used responsibly so that it would not be used at the cost of another's well being.

2. Reflection on Youtube video

a. *How did you feel after watching the video?*

After watching the video, I realize more how powerful machine learning is and how easy it is to generate bias in algorithms. These biases could be exploited for unethical uses.

b. List three things that you learned from the video

- Algorithmic bias and how it can be used to create exclusionary experiences and create discriminatory practices.
- How machine learning techniques and training sets are used to teach a computer facial recognition. And how non-diverse training sets could result in algorithmic bias.
- Inclusive coding: **Who** codes matters, **How** we code matters, and **Why** we code matters.
- Bonus: ***"Poet of Code"*** is a pretty neat description for programmers and the like.

3. Example of Algorithmic Bias in society

a. Link to example: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3723046

b. Summary of chosen example

Companies have recently begun using machine learning to evaluate large numbers of job applications based on some basic features like resumes or cover letters [1]. From a certain point of view, you may think that removing the human reviewer would result in less bias but as the video stated, some algorithms can lead to exclusionary experiences and discriminatory practices. Algorithms can be used to find certain features or characteristics in an individual's application like their name or where they went for education. They can use those features to

determine one's ethnicity or gender and could hire more applicants if they hold certain features. Companies could find what subgroup an applicant belongs to and favor applicants of a certain subgroup over others [1].

c. Why did you pick this example?

As for the reason I chose this example, I guess it's because hiring has been on my mind recently. This is because I am currently in the process of finding an internship, and along the process of doing this assignment, made me think more of how machine learning might be incorporated in the hiring process.

d. Describe one way that you could fix this issue

One way to fix this could be done by using a more diverse training set. The algorithm may have noticed the more successful applicants belong to certain subgroups, this may be because the training set may have contained more or less data points of certain subgroups. The diversity could help see more patterns based on the entire training set rather than specific groups.

4. (Bonus) Proper use of generative AI and some ethical dilemmas

a. Two ethical ways to use generative AI in this course

- Topic explanation: you can use AI to help you understand topics by explaining it differently than the instructor of the course or by giving more examples.
- Code assistance: There are a lot of libraries used in Python. I use generative AI as an advanced google search, it can help me to find methods and functions easier.

b. Should software companies pay for any copyrighted materials used in training models?

I believe no, the main issue with pretty much all machine learning systems is the lack of a diverse training set. A paywall to training models makes creating diverse training sets more difficult and could result in a more frequent appearance of algorithmic bias.

Sources/References

[1] Langenkamp, Max, Allan Costa, and Chris Cheung. "Hiring Fairly in the Age of Algorithms." *Available at SSRN 3723046* (2019).