# Information Presentation Response

Presentation P5a on the Weapons of Math Destruction provides excellent detail on both the social and technical perspectives of the arguments made in O’Neil’s *Weapons of Math Destruction*. We might be 4th year computer science students, but not everyone is knowledgeable in data science so the explanations of the technical aspect are well done. Some comparisons of what kind of algorithms are or aren’t WMD would be useful to give a concrete understanding of what the book is concerned about.

# Algorithmic University Admissions

I argue that no data that the candidate has a direct influence over should be considered in such an algorithm. Only items such as grades, extra-curricular activities, teacher endorsements, or any other achievements which the student can earn are fair considerations, essentially anything the student has direct influence over that is academically related. More importantly, the information I would argue should never be in this kind of model is personal information like age, gender, race, and living address; and environmental factors which the person does not have control over such as parental education history or anything related to their upbringing.

Using personal data like age, gender, race, and address can be biased towards communities that have the means to receive a higher-quality education. And this does not just mean location, it is not hard to see that historically there are privileged groups who have had it easy in terms of education. A prominent historical example is that being Caucasian had a strong effect on your chances in academia [1]. If these are variables in the algorithm, the data will more than likely choose more of these historical biases. One example is in the use of predictive policing algorithms where they did have access to this kind of personal information. The result was the algorithm suggesting more policing concentration in minority neighbourhoods, especially targeting the Black and Hispanic population [2].

Like in predictive policing efforts, while you might still get the desired result (catch more crimes or admit better quality students), the algorithm will miss a lot of potential candidates because of the biased data. Imagine a scenario of a student from an underprivileged neighbourhood with poor education, who puts in the work for good grades, and participated in any extra-curriculars that they could find. But in the end was rejected by the algorithm because historical data showed that the area which they lived in produced mostly poor candidates. This is why we should be selective in choosing what data to include to not discriminate against groups of people and potentially missing amazing candidates.

# Cultural Issues in Computer Science Education

I believe the issue of diversity, equality, and inclusion (DEI) in any field of work is an important concept to acknowledge and understand, as there is historic bias and discrimination in almost any field. An example outside of technology would be Nursing, specifically that men in Nursing have been historically looked down upon [3]. Not only to help DEI issues in the field but as a participating member of society. In the case of computer science and closely related technology fields, a trend I notice as a student myself is that the majority of students focus solely on improving their technical skills and nothing else. This is problematic in a number of ways but ignorance of social and diversity issues is definitely one of them.

In Nicki Washington’s article, it discusses the lack of diversity in both the computer science industry and education faculties. The statistics show that Whites and Asians represent 68% of CS undergraduate students which agrees with my anecdotal experience. I think educating aspiring computer scientists is a good idea to address the multitude of issues listed in the article. The one I would like to mention is to provide equal opportunity to the growing diverse workforce in the US and Canada. If the estimate of most Americans being a minority by 2044 [4] is correct, then we need to remove any social stigma of Computer Science being a major for White and Asian men. Referring to Nursing again, because of the social stigma of “the male nurse”, only about 12% of nurses are male in the U.S. [5] despite the claim of “women are better suited to caring for others” being largely unsupported now. The percentage of male nurses is growing year by year, likely thanks to our views becoming more open-minded and proper education of the topic. Overall, a CS course on cultural diversity could have the effect of decreasing the social stigma around “computer science people” and provide more equal opportunities for underrepresented populations in the field to flourish, and I believe it would be beneficial for many whom I know to understand more about the field than just the technical side.

# References

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