

Assignment 5: Social Issues

1. Algorithmic University Admissions

You have recently been hired as a consultant for the completely fictional University of Scarborough, Toronto Campus in their admissions department. Until now, their admissions has been based on a very simple formula: sort the students by their highschool grade average, and offer placements to the top n students where n is determined by teaching capacity.

The reason you've been hired is to lead a team developing a new admissions program that will (hopefully) be better at selecting high quality candidates. You have access to essentially unlimited information on prospective students, including high school marks, but also age, gender, race, extra-curricular activities, family income, address, parental education history, criminal history, and taxation history. Furthermore, you have 40 years worth of the same data on every student who has attended USTC, correlated with their GPA.

The admissions department thinks this should be a piece of cake. Just throw all the data into a machine learning model, and choose the students who are statistically most likely to succeed. But you have some reservations, having read about algorithmic bias in these sorts of systems.

Your job is to provide a short report of 250-500 advising your bosses on what (if any) of the data should NOT be included into your system. They will be sceptical of anything that would reduce the quality of the algorithm, so you'll need to give specific examples of the problems that certain types of data could cause, preferably with evidence.

2. Cultural Issues in Computer Science Education

In her recent paper titled "*When Twice as Good Isn't Enough: The Case for Cultural Competence in Computing*", Nicki Washington discusses the need for "cultural competence as a required focus for university computing departments". Read the article, and respond to it in 250-500 words. Does the article resonate with your experience? Do you think this is a good idea? Should UTSC institute the practices called for? You can base this on a combination of the data presented, what you've learned in this course, and your own personal experience. But you will need to go beyond simply saying "I agree" or "I disagree" and use data and examples to support your stance.