HW 5

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This homework is meant to give you practice in creating and defending a position with both statistical and philosophical evidence. We have now extensively talked about the COMPAS [1] data set, the flaws in applying it but also its potential upside if its shortcomings can be overlooked. We have also spent time in class verbally assessing positions both for an against applying this data set in real life. In no more than two pages [2] take the persona of a statistical consultant advising a judge as to whether they should include the results of the COMPAS algorithm in their decision making process for granting parole. First clearly articulate your position (whether the algorithm should be used or not) and then defend said position using both statistical and philosophical evidence. Your paper will be grade both on the merits of its persuasive appeal but also the applicability of the statistical and philosohpical evidence cited.

Computers can process information faster than humans, and due to this irrefutable fact, developers have turned to algorithms with the aim of increasing efficiency in every field. Nowadays, algorithms can help you finish your homework faster, recommend movies to watch, and even find exactly what you are craving at any point of the day. The list goes on and on, and it seems like there are no downsides to incorporating AI to our daily lives. However, even algorithms are wrong at times, and these imperfections can lead to severe consequences if society is fully dependent on AI. The example that I aim to analyze in detail is the COMPAS algorithm, used in the judicial system to predict the likelihood of a defendant reoffending. At first glance, this algorithm might seem like the perfect solution to increase efficiency and eliminate bias by judges since they will have an accurate calculation to aid their decision. In fact, the data over the years has completely shown the opposite, as COMPAS has exhibited significant racial biases, by misclassifying Black defendants as high risk at a disproportionate rate compared to white defendants. Therefore, judges must stop using COMPAS as it raises ethical concerns during the decision making process.

First of all, COMPAS is built on defendants completing a survey with questions ranging from their employment status to criminal history and substance abuse. The data is then collected, and put to use by the algorithm. The outcome is a score, either "low", "medium" or "high" risk, that evaluates the chances of the defendant reoffending. The judges use the score to determine bail amounts, sentencing lengths and parole decisions. From a developer's perspective, this algorithm is a great way to advance the use of AI in every field. However, biased data leads to biased outcomes.Thus, historical data that might reflect past biases in policing and sentencing will certainly produce an outcome that is biased as well.

One of the studies done on the accuracy of COMPAS involved 7000 cases of individuals arrested in Broward County, Florida in 2013. The decisions of the algorithm were all over the place, and when compared to the updated information on these people, racial bias was discovered. About 45% of the Black defendants that were classified as "high-risk" did not reoffend, while 23% of the white defendants that were classified as "low-risk" did reoffend. Overall, the predictive accuracy rate was about 61% for both races. Just by comparing the false positive and false negative rates, we can determine that COMPAS is unfairly increasing the chances of Black defendants receiving longer sentences, higher bond compensations or being denied parole. On the other hand, the algorithm is underestimating the risk from white defendants which raises potential public safety concerns. COMPAS is not only advancing data driven solutions in our judicial system, it is also perpetuating systemic racism. All individuals must be treated equally under the law, but with the

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[1] https://www.propublica.org/datastore/dataset/compas-recidivism-risk-score-data-and-analysis
[2] knit to a pdf to ensure page count

incorporation of this algorithm, people are being treated as mere data points. Moreover, defendants have the right to a fair trial and the ability to challenge evidence used against them. If someone cannot understand in detail the decision making process of COMPAS then its outcome cannot be used against them.Through the utilitarianism lenses, actions are deemed right if they promote the greatest good for the greatest number of people. When looking at COMPAS, the harm caused by misclassifications certainly outweighs any benefits from the enhanced efficiency.

The impact of the wrong decision by COMPAS goes beyond the courtroom, and stacked up over several years, it can lead to mistrust in a justice system that appears unjust and discriminatory. For instance, a "high-risk" label on a defendant can hinder employment opportunities and social acceptance. Instead of giving individuals a second chance back to our society, they are getting rewarded with unnecessary time in jail, negatively affecting families and communities. If one was to offer a solution to the many problems that come with COMPAS, they could start out by targeting the privacy issue. The code for the algorithm has to be open-source, giving us the opportunity to have a closer look at their practices, in order to make a more well-rounded argument against its use. Also, the judges should start conducting personal interviews instead of questionnaires, so the model gets more accurate data as its inputs. Lastly, COMPAS should minimize the amount of historical data that is being used when calculating the scores, as it might reflect past biases of the judicial system.

All in all, COMPAS should not be used by judges anymore. The increase in efficiency comes with a hefty cost, one that advances systemic racism. Black defendants are disproportionately misclassified as high risk reoffenders by this algorithm, while white defendants are granted a second chance. If we want the people to trust the justice system, it has to be more transparent, and not utilize biased algorithms for the sake of speeding up the process. Everyone is equal under the law, and the color of your skin should not determine your future.