Ethical Matrix:

The Ethics of Artificial Intelligence for Detecting Crime

Introduction:

Many companies have developed technologies to help police assess crime. These tools have allowed for statistical predictions that detect high crime areas, hours, and even populations. These analyses have been taken a step further with artificial intelligence algorithms that provide more robust classifications of various crime information. The intention behind using technology in crime analysis is that it may provide more holistic observations.

Matrix:

Before using technology like this on the public, one must consider three important topics: well-being, autonomy, and justice. Well-being can be thought of as the ability for everyone to have relative max fulfillment in life. Autonomy is the freedom one has to pursue their goals and not have their opportunities or choices limited. Justice is most generally thought of as fairness. More specifically it is the elimination of being treated differently for arbitrary differences (height, race, gender, religion, taste in food), and the elimination of special benefits and advantages, so that everyone has an equal amount of relative freedom.

Given this knowledge, ethics discussions must be involved in every step of designing technology that affects people, especially in situations where natural rights, well-being, and freedom may be at risk. The following figure is a matrix containing examples pertinent to a discussion of ethics. This table is focused on the pros and cons of using artificial intelligence algorithms to detect crime. A discussion will follow to cover whether or not technology should be permitted in this context.

Stakeholders	Wellbeing	Autonomy	Justice
Company	Pro: Efficient algorithms that benefit society and create profit Con: lose money if things go astray	Pro: creative algorithms for new improvements Con: Forced shut down of operations. Reprimands from larger entities	Pro: constraints help maintain quality and applicability Con:some constraints are enforced that are unavoidable
Consumer	Pro: Remove bias and decrease unjust arrests. Happier and more trust. Con: Algortithms are difficult to make without bias. Unjust arrests may increase or face new issues Less happy/trust	Pro: more frreedom to live and make decisions peacefully Con: less freedom due to unjust punishments	Pro: treatment is made more equitable. Con: Arbitrary differences impede the inherit right of freedom
Society	Pro: Less crime, less convictions, more trust/happiness, larger scale Con: more unjust convictions, more crime, less trust/happiness, larger scale	Pro: larger groups feel equal. More freedom to live as they please Con: larger groups are unjustly robbed of freedom	Pro: No imbalance of power and advantages Con: people with established benefits and treatments may lose some of their privileges. may cause more tension/ bring problem full circle
Future Society	Pro:These issues may only affect the present and might be fixed in the future Con: Possibility for issues to last longer and get worse causing more divisiveness	Pro: The current society may have more freedom Con: the future society may have less freedom and vice versa for pro and coon.	Pro: Arbitrary differences no longer impede natural rights of the current society Con: Arbitrary differences are a bigger issue that impede the rights of the future society

Discussion:

As one can see, there are many ways in which using artificial intelligence can affect the populations where the technology is being used. This portion of the paper will discuss the topics from the matrix that seem to have the highest payoff and risks for each group per category. This information will be used to discuss whether or not technologies such as this should be permissible in a crime detection setting.

The greatest benefit of employing algorithmic crime detection is the possibility of including more considerations when assessing possible subjects. In an ideal situation, each algorithm would pick up on unexplored aspects of situational context. For instance, an algorithm with medical information, criminal history, demographics, and phenotypic information, may provide an in-depth understanding that is more sensitive to each suspect's complex background. This information is generally already available to the justice system. However, using an algorithm to search for relational data among this information may provide a more holistic understanding of how aspects are related to one another, which in turn can be used to better assess a given situation.

Moreover, since part of an investigation relies on following a chain of events and deductive reasoning, algorithms may be ideal since they sometimes function similarly. Algorithms may be able to automate this process and possibly produce a more efficient and expedited conclusions, which would be highly beneficial in a kidnapping or murder case that is time sensitive. If the algorithms are constructed and maintained correctly, they could be great objective measures of assessing crime. Ultimately, the highest payoff for this technology is the possibility of improving the justice system crime assessments to be more equitable and data driven.

At first glance, there are seemingly incredible opportunities in using artificial intelligence within this domain. However, the previous payoffs are quite farfetched for several reasons. First and foremost, relying on artificial intelligence algorithms, whose 'intelligence' is dependent on the amount of data it is given, seems irresponsible in a situation where someone's well-being, freedom of choice, and justice are at stake. Artificial intelligence algorithms are only as intelligent as the data provided to them allows them to be. To illustrate, for the algorithm to fully understand the context of a situation, it must have as much data as possible. The problem is that the world around us is incredibly complex, and it is difficult to account for the seemingly endless variables that factor into a given situation. Thus, these algorithms are highly susceptible to error.

Furthermore, algorithms are constructed by programmers, and since programmers are not perfect, their implicit biases are expressed in the code. What is scarier is that they may or may not be aware of it. Biases can cause major issues with how an algorithm assesses a situation. Issues like these may have catastrophic side effects, especially if they are used on something as serious as crime detection.

A rebuttal can be made that humans suffer the same issues. We too assess situations on the amount of contextual information we receive. However, the key difference is in how contextual data is interpreted relative to variations in meanings.

Arguably, artificial intelligence algorithms have difficulty picking up on abstract social cues, which diminishes how well they understand information. They rely on how well a programmer designs them, so what would it mean if a programmer could not code for something like hostility? Topics of this nature are prevalent in assault-related crimes, so they are relatively important to understand. Understanding words is quite difficult since there is an abstract element behind their meaning. If algorithms rely solely on statistical examinations, they may mistakenly

attribute hostility to a general definition and common pairings for various situations. Generalizations are often how context is missed. Using the incorrect version of a word may cause the algorithm to mistakenly assess a suspect as being hostile, resulting in their imprisonment or even death.

Admittedly, the above may be interpreted as conjecture. A more concrete example of these issues is displayed with the artificial intelligence model of computer vision. Computer vision image classifiers have been noted to be biased towards white faces. Imagine how this would unfold if the police department relied on computer vision for suspect identification or threat assessment. Individuals who do not meet the criteria of the algorithm may be misjudged.

Lastly, consider how situations like these would only perpetuate the ongoing issues that people of color face. In fast-paced situations, people are killed due to a lack of judgment and clouded decision-making. How reliable would an algorithm be here?

In summation, the possible benefits of artificial intelligence detecting crimes does not seem to outweigh the possible risks. There would need to be limitations on its use and high accountability for its creation. Being that the lives, well-being, and justice would suffer while the algorithm is being updated, it does not seem as though algorithmic crime detection would be permissible.