

# A Fairer Future for Predictive Policing

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## Question and Background

Predictive policing is a term used to describe the use of data, AI, and Machine Learning techniques to predict future crime before it happens. It quickly became controversial — supervisors misreported data to ensure job safety, the use of biased arrest data led to models that caused over-policing, and studies doubted the effectiveness of the programs. Some US cities have banned its use entirely. However, with the current policing problems in the US, the need for a more efficient, fair police force is more critical than ever.

**Research Question: How can we implement predictive policing more fairly and equitably, while simultaneously improving policing efficiency?**

## Course Integration and Literature

### Philosophical:

- *Utilitarianism*: Since the police have an impact on every citizen’s life, it makes sense to evaluate the overall societal impact of predictive policing.
- *Contractualism*: If a group of citizens were to discuss the creation of a city behind a veil of ignorance, safety would be one of their top priorities. Without knowing one’s place in said city, both the effectiveness and fairness of a police force would be equally important.

### Legal

- *4th Amendment & Title VI of the Civil Rights Act of 1964*: Combined, these laws prevent unlawful searches and racial discrimination, so a model’s decisions must be explainable to the public and be non-discriminatory.

### Technological

- *Black Box Models*: Predictive policing models are often highly complicated, and transparency can be a problem. If a model’s decisions are too difficult to explain, it leads to challenges in a court setting.

### Synthesis

- Transparency is extremely important legally, which makes constructing the design of a black-box style model challenging.
- Combining all three aspects, our comprehensive approach to ensuring fairness involves designing a new system that balances fair data collection and non-discriminatory practices to construct an efficient predictive policing model that is ethical in both of our chosen frameworks.

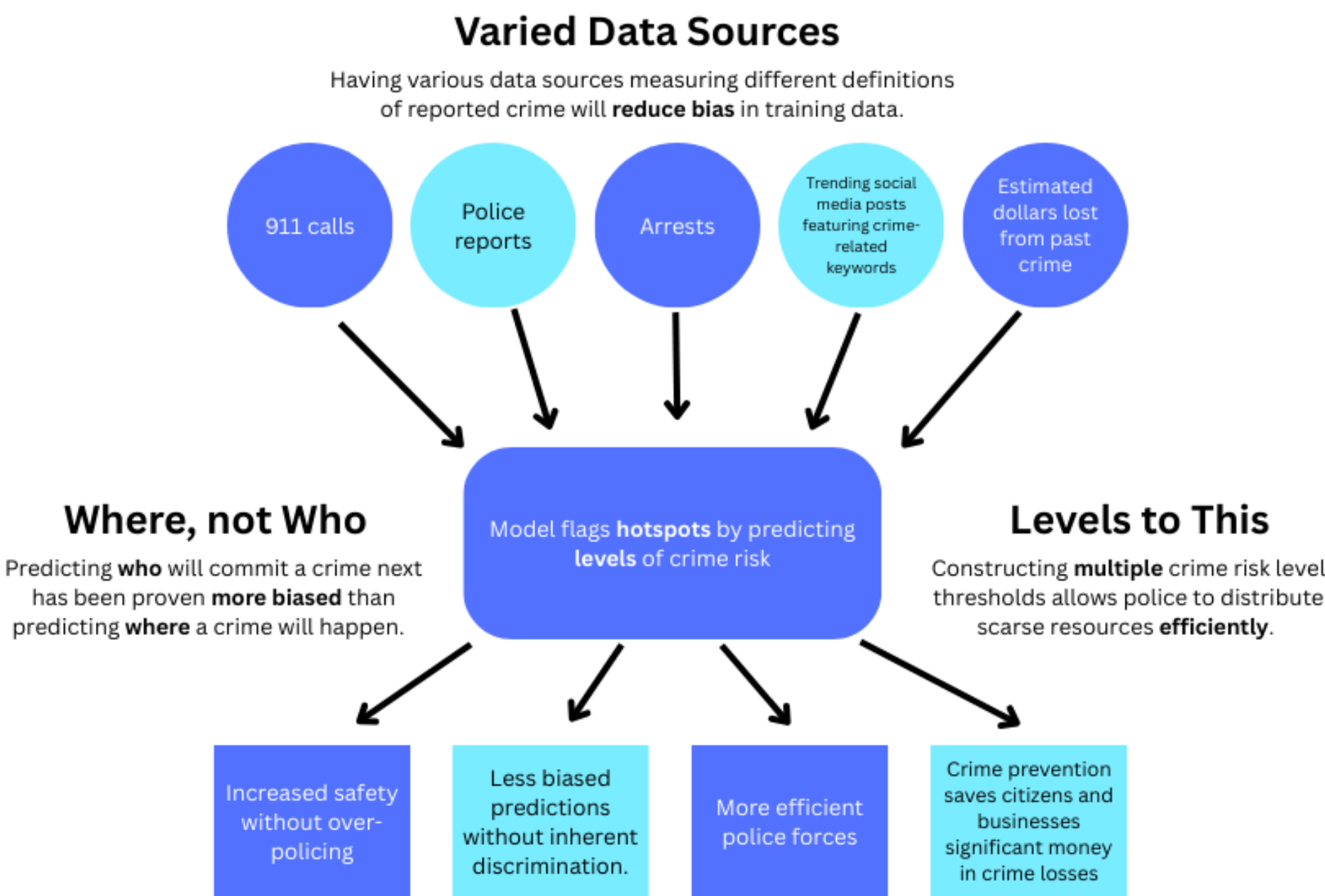
## Analysis/Data/Method/Arguments

We analyzed case studies from both a Utilitarianism and Contractualism point of view to identify the pros and cons of current predictive policing infrastructure, and we used our analysis to propose the foundation of a more efficient and fair predictive policing system.

## Results

Case Study	Pittsburgh, PA	Chicago, IL
Study Description	Used 911 call data to identify “hotspots” of reported crime and used a higher proportion of policing resources in these hotspots.	Tested the integrity of a previously used predictive policing system called SSL (Strategic Subject List) by seeing the extent to which it could predict race based on the risk scores.
Study Result	<ul style="list-style-type: none"><li>• Statistically significant reduction of crime.</li><li>• No evidence of over-arresting minority populations.</li><li>• Estimated \$3.4 million saved in crime costs.</li></ul>	<ul style="list-style-type: none"><li>• Results indicated that through the risk score, SSL was able to predict race.</li><li>• These results were used to criticize how predictive policing systems are being used and their exploitation of certain minorities.</li></ul>
Utilitarianism	<p><b>Pros:</b> Reduced crime, costs, and discriminatory policing all benefit society.</p> <p><b>Cons:</b> If a significant proportion of police resources are distributed in such a small area of a city, crime in other parts of the city could increase which hurts the overall population of the city.</p>	<p><b>Pros:</b> Could help prevent a higher percentage of violent crimes from the higher risk individuals.</p> <p><b>Cons:</b> Since the system was deemed racially biased, its predictive capabilities could harm society to a larger extent by profiling the wrong individuals.</p>
Contractualism	<p><b>Pros:</b> If people didn’t know where they were going to live, they would likely want more police where the most crime is reported, wouldn’t want discriminatory over-policing, and the crime costs saved would be important to potential business owners.</p> <p><b>Cons:</b> Since safety is extremely important, people might want more data to be used than just 911 calls because that might not be an accurate measure of the true crime rates in the city.</p>	<p><b>Pros:</b> If you were unaware of your place in society, it could be argued that this system could reduce crime in the designated area.</p> <p><b>Cons:</b> If you were put in a scenario where you might be in the demographic being racially profiled daily, you likely would disagree with the SSL system and its uses.</p>

## Design/Policy Recommendations



## Conclusion/What did you Learn

Predictive policing has had an extremely controversial history. Though it was created to optimize policing resources, it has had many negative side effects, including furthering racial bias in policing systems. By focusing on where crimes are likely to occur as opposed to who will commit them and considering various data sources, predictive policing systems can both be more efficient and more ethical from the viewpoints of utilitarianism and contractualism.

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