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Predictive Policing: The Use of AI in the Justice System and the Future of Law Enforcement

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Predictive Policing and its Ramfications: The Use of AI in the Justice System and the Future of Law Enforcement

Issues:

Data and Privacy:

- Mass surveillance and data collection technology raise privacy concerns for the general public, with global opposition to USA 'big brother' surveillance

Obscurity:

- These programs operate discreetly, and their effects are not as noticeable compared to overt surveillance such as a security camera
- The programs themselves are **'black boxed'.** Revealing how they work would give competitors an edge, leaving law makers and investigators with little information
- Many of the algorithms are often so complex, the forces using them do not fully understand how they work.

Discrimination:

- Biased data can have police overcrowd certain areas, leading to a re -entrenchment of systemic racism
- Data for existing programs is often inaccurate or incomplete, resulting in ethnic profiling
- Julia Angwin found an algorithm that determined bail was more likely to flag **African Americans** as **high risk**
- Programs are likely to inherit the biases of their creators if not governed correctly

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What is Predictive Policing?

The use of AI, data collection and analysis, and machine learning to anticipate trends and inform police of possible prevention methods.

3 main objectives:
- Predicting perpetrators
- Predicting victims
- Predicting when and where there is a higher risk of new crime events

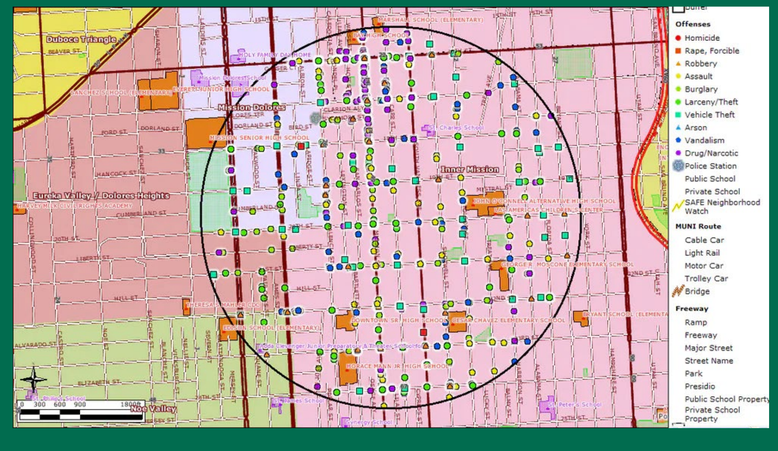
How does it Work?

Complex statistical algorithms analyze 'big data', data in large volumes that is collected in near or real time, and links different sources of information together.
This data is used in a variety of ways:
- geospatial mapping of high risk areas
- assigning risk scores to individuals

Building a Basic Predictive Model:

1. Collect and clean the data
2. Analyze the data via statistical model in two steps:
   a. Training Step: The model learns relevant patterns in available historical data. Links values of relevant indicators to the risk of a new crime event
   b. Prediction Step: Predictions are made for a certain time frame, outputting a risk percentage for each grid cell based on current values of the indicators.
3. The prediction results from the second phase are mapped, taking into account the police operational capacity at the highest risk areas based on a certain critical threshold value. Zones are mapped out, and color-coded by risk value and/or crime type.

Data Requirements:
Three Key Variables:
1. Time
2. Place
3. Type of Crime



A map generated by a program.

Take a picture to download the full paper

Evaluating Predictive Policing:

Most programs are judged on:
1. effectiveness of predictive analysis
2. crime rates *before* and *after* the program was introduced
3. Cost comparing the current methods that are being replaced by predictive policing

The Current Future of Policing:

Many police forces have already turned to these programs, making proper government and legislation **essential** moving forward

Some Suggestions:
- The need for empirical tests and evaluations to determine its effectiveness
- Data quality and reliable data collection must be **enforced** and **prioritized** to ensure that this technology is reliable.
- Companies must consent to in depth analysis and routine examinations
- Proper legislation and enforcement must be applied
- Creating an independent body to overlook these programs may be required

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