

A GLIMPSE INTO THE FUTURE

ARTIFICIAL INTELLIGENCE IS NOW USED TO PREDICT CRIME, BUT IS IT BIASED?

the software is supposed to make policing more fair and accountable. but critics say it still has a way to go.

What is fair?

It seems a simple question, but it's one without simple answers. That's particularly true in the arcane world of artificial intelligence (AI), where the notion of smart, emotionless machines making decisions wonderfully free of bias is fading fast.

Perhaps the most public taint of that perception came with a 2016 ProPublica investigation that concluded that the data driving an AI system used by judges to determine if a convicted criminal is likely to commit more crimes appeared to be biased against minorities. Northpointe, the company that created the algorithm, known as COMPAS, disputed ProPublica's interpretation of the results, but the clash has sparked both debate and analysis about how much even the smartest machines should be trusted.

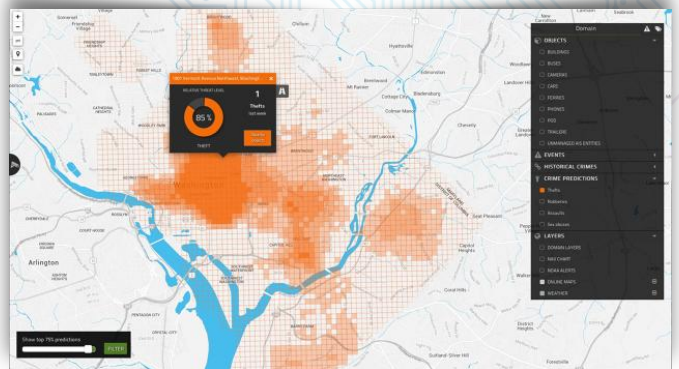
"It's a really hot topic—how can you make algorithms fair and trustworthy," says Daniel Neill. "It's an important issue." Neill now finds himself in the middle of that discussion. A computer scientist at Carnegie Mellon University, he and another researcher, Will Gorr, developed a crime-predicting software tool called CrimeScan several years ago. Their original concept was that in some ways violent crime is like a communicable disease, that it tends to break out in geographic clusters. They also came to believe that lesser crimes can be a harbinger of more violent ones, so they built an algorithm using a wide range of "leading indicator" data, including reports of crimes, such as simple assaults, vandalism and disorderly conduct, and 911 calls about such things as shots fired or a person seen with a weapon. The program also incorporates seasonal and day of week trends, plus short-term and long-term rates of serious violent crimes.

The idea is to track sparks before a fire breaks out. "We look at more minor crimes," Neill says. "Simple assaults could harden to aggravated assaults. Or you might have an escalating pattern of violence between two gangs."

Both PredPol and CrimeScan limit their projections to where crimes could occur, and avoid taking the next step of predicting who might commit them, a controversial approach that the city of Chicago has built around a "Strategic Subject



PRECRIME



List" of people most likely to be involved in future shootings, either as a shooter or victim.

The American Civil Liberties Union [ACLU], the Brennan Center for Justice and various civil rights organizations have all raised questions about the risk of bias being baked into the software. Historical data from police practices, critics contend, can create a feedback loop through which algorithms make decisions that both reflect and reinforce attitudes about which neighborhoods are "bad" and which are "good." That's why AI based primarily on arrests data carries a higher risk of bias, it's more reflective of police decisions, as opposed to actual reported crimes. CrimeScan, for instance, stays away from trying to forecast crimes that, as Neill puts it, "you're only going to find if you look for them." "I can't say we're free of bias," says Neill, "but it's certainly more reduced than if we were trying to predict drug possession."

Then there's the other side of the feedback loop. If a predictive tool raises expectations of crimes in a certain neighborhood, will police who patrol there be more aggressive in making arrests?

"There's a real danger, with any kind of data-driven policing, to forget that there are human beings on both sides of the equation," notes Andrew Ferguson, a professor of law at the University of the District of Columbia and author of the book, *The Rise of Big Data Policing: Surveillance, Race, and the Future of Law Enforcement*. "Officers need to be able to translate these ideas that suggest different neighborhoods have different threat scores. And, focusing on the numbers instead of the human being in front of you changes your relationship to them."

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implementing the system has to understand they have a responsibility," Schultz says. "And when we design how we're going to implement these, one of the first questions is 'Where does this go in the police manual?' If you're not going to have this somewhere in the police manual, let's take a step back, 110 people."

It's been a learning process, says Neill, to adapt CrimeScan so that police officers at the street level believe it's helpful. "We need to show that not only can we predict crime, but also that we can actually prevent it," Neill notes. "If you just throw the 115 tool over the wall and hope for the best, it never works that well."

He also acknowledges the risk of deferring too much to an algorithm.

"A tool can help police officers make good decisions," he 120 says. "I don't believe machines should be making decisions. They should be used for decision support."

Neill adds, "I do understand that, in practice, that's not something that happens all the time."

Randy Rieland, march 15, 2018
Smithsonian com

1. Introduce the document
2. Explain what CrimeScan is.
 - How is it supposed to predict crimes?
3. What information is predicted?
 - Explain this choice.
4. In what way would it change the way the Police works?
5. Is AI important in our world today. Explain.
6. What is a « black box » algorithm?
 - Why could it be a problem?
 - Explain « AI Now's » recommendation.
7. « I don't believe machines should be making decisions ». Do you agree?

The reality is that artificial intelligence now plays a role—albeit often in the background—in many decisions affecting daily lives—from helping companies choose who to hire to setting credit scores to evaluating teachers. Not surprisingly, that has intensified public scrutiny of how machine learning algorithms are created, what unintended consequences they cause, and why they generally aren't subjected to much review.

For starters, much of the software is proprietary, so there's little transparency behind how the algorithms function. And, as machine learning becomes more sophisticated, it will become increasingly difficult for even the engineers who created an AI system to explain the choices it made. That opaque decision-making, with little accountability, is a consequence of what's become known as "black box" algorithms.

"The public never gets a chance to audit or debate the use of such systems," says Meredith Whittaker, a co-founder of the AI Now Institute, a research organization at New York University that focuses on AI's impact in society. "And, the data and logics that govern the predictions made are often unknown even to those who use them, let alone to the people whose lives are impacted."

In a report issued last fall, AI Now went so far as to recommend that no public agencies responsible for such matters as criminal justice, health care, welfare and education should use black box AI systems. According to AI Now, seldom are legal and ethical issues given much consideration when the software is created.

"Just as you wouldn't trust a judge to build a deep neural network, we should stop assuming that an engineering degree is sufficient to make complex decisions in domains like criminal justice," says Whittaker.

"If these systems are designed from the standpoint of accountability, fairness and due process, the person

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