



NEW BEGINNINGS

2018 has brought about new beginnings for the WSCPA. The big move from Walla Walla to Spokane has not come without some challenges, but none that can't be overcome without the cooperation of all of our members.

Join us for upcoming training events.

SPRING 2018 AT A GLANCE.....

42nd Annual Crime Prevention Conference in Spokane, WA

The 42nd Annual Crime Prevention Conference was held at the Centerplace Conference facility in Spokane Valley, WA on May 7th and 8th, 2018.

The event was a success. Thank you to all who came out and gave support.

Also.....Church Safety and Security

The WSCPA and Spokane County Sheriff's Department sponsored a six- hour seminar at the Life Center Church on the 9th of May 2018.



This seminar, presented by Tina Lewis Rowe, was a huge success. Thank you to all who came out and gave support.

SUMMER 2018

National Night Out

Show support for your local neighborhoods and police.

August 7, 2018

Locations vary.

Upcoming Training and Classes

The following classes are coming soon.....

Oct 2018 – Spokane, WA

Be the first to sign up.



David Smith, 2018 Conference



Tap here to add a caption

Company Name
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Website

2018 ELECTIONS

Elections have come and gone, ballots cast, and results are in.

They are as follows:

Pres Elect – Vicki Ruley
Vice Pres – Chris Patin
Secretary – Jennifer Gray
Region 2 Director – Mark Solomon
Region 4 Director – Open
Region 6 Director – Linda Watts
Region 8 Director – Daryl Pearson

Congrats newly elected!!



Betsy Smith, 2018 Conference

Share a Tip

If you have anything you would like to share with the membership please submit it to info@wscpa.net and we will attempt to have it posted as soon as possible.

CONFERENCE 2019

40 HR CRIME PREVENTION

With the end of this year's conference, it is time to think about the next one.

Let's get a jump start on it. Any and all thoughts and input are greatly appreciated.

Send thoughts to info@wscpa.net.

WSCPA WEBSITE

As many have probably noticed, the website has undergone many changes. Please feel free to send in ideas for it. We are an organization, not a few individuals.....all input is appreciated.



Seattle Children's[®]
HOSPITAL • RESEARCH • FOUNDATION

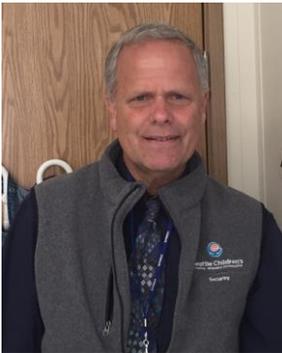
AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS

24 HR CPTED

Companies and cities all over world are experimenting with using artificial intelligence to reduce and prevent crime, and to more quickly respond to crimes in progress. The ideas behind many of these projects is that crimes are relatively predictable; it just requires being able to sort through a massive volume of data to find patterns that are useful to law enforcement. This kind of data analysis was technologically impossible a few decades ago, but the hope is that recent developments in machine learning are up to the task.

There is good reason why companies and government are both interested in trying to use AI in this manner. As of 2010, the United States spent over [\\$80 billion a year](#) on incarcerations at the state, local, and federal levels. Estimates put the United States' total spending on law enforcement at over [\\$100 billion a year](#). Law enforcement and prisons make up a substantial percentage of local government budgets.

Direct government spending is only a small fraction of how crime economically impacts cities and individuals. Victims of crime can face medical bills. Additionally, high crime can reduce the value of property and force companies to spend more on security. And criminal records can significantly reduce an individual's long-term employment prospects. University of Pennsylvania professor Aaron Chalfin did a review of the current research on the economic impact of crime and most analysis puts the cost at approximately [2% of gross domestic product](#) in the United States



Jim Sawyer – President
“Thank you for your continuing support.”

8 HR IAHSS CPTED

Seattle Childrens is hosting a 8 hour IAHSS CPTED seminar July 12-13. See website calendar for details

AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS CONT.

This article will examine AI and machine learning applications in crime prevention. In the rest of the article below, we answer the following questions:

- What AI crime prevention technologies exist today?
- How are cities using these technologies currently?
- What results (if any) have AI crime prevention technologies had thus far?

Companies are attempting to use AI in a variety of ways to address crime that this article will break down into two general categories: (a) Ways AI is being used to detect crimes, and (b) Ways AI is being used to prevent future crimes.

Crime Detection

City infrastructure is becoming smarter and more connected. This provides cities with sources of real time information, ranging from traditional security cameras to smart lamps, which it can use to detect crimes as they happen. With the help of AI, the data collected can be used to detect gunfire and pinpoint where the gunshots came from. Below, we cover a range of present applications:

Gunfire Detection – *ShotSpotter*

According to ShotSpotter, only about 20 percent of gunfire events are called in to 911 by individuals, and even when people do report the event they often can only provide vague or potentially inaccurate information. They claim their system can alert authorities in effectively real time with information about the type of gunfire and a location that can be as accurate as 10 feet. Multiple sensors pick up the sound of a gunshot and their machine learning algorithm triangulates where the shot happened by comparing data such as when each sensor heard the sound, the noise level, and how the sound echoed off of buildings.

They claim to be in use in over 90 cities including New York, Chicago, and San Diego. Most of their clients are in the United States, but last year they added Cape Town, South Africa to their list of customers.

The company had their IPO in July 2017, and their current [market cap is \\$183 million](#).



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AI Security Cameras – *Hikvision*

ALICE COURSE

Seattle PD is hosting an ALICE course Sept 20-21. See website calendar for details

AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS CONT.

While ShotSpotter listens for crime, many other companies are using cameras to watch for it. Last year [Hikvision](#), a Chinese company which is a major security camera producer, [announced](#) they would be using chips from Movidius (an Intel company) to create cameras able to run deep neural networks right on board.

They say the new camera can better scan for license plates on cars, run facial recognition to search for potential criminals or missing people, and automatically detect suspicious anomalies like unattended bags in crowded venues. Hikvision claims they can now achieve 99% accuracy with their advanced visual analytics applications.

With [21.4% of the market share](#) for for CCTV and Video Surveillance Equipment worldwide Hikvision was the number supplier for video surveillance products and solution in 2016 according to IHS.

Movidius explains the benefits of having this capacity directly built into new cameras

Their systems have been using AI to perform tasks like facial recognition, license plate reading, and unattended bag detection for several years, but that video processing has traditionally taken place on a centralized hub or in the cloud. By performing the processing within the cameras themselves, they are making the process faster and cheaper. It can also reduce the need for using significant bandwidth since only relevant information needs to be transmitted.

Among the successes Hikvision cites is a [65% drop in crime in Sea Point, South Africa](#) following the introduction of their



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cameras system.

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AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS CONT.

AI for Crime Prevention

The goal of any society shouldn't be to just catch criminals but to prevent crimes from happening in the first place, and in the examples below, we'll explore how this might be achieved with artificial intelligence.

Predicting Future Crime Spots – *Predpol*

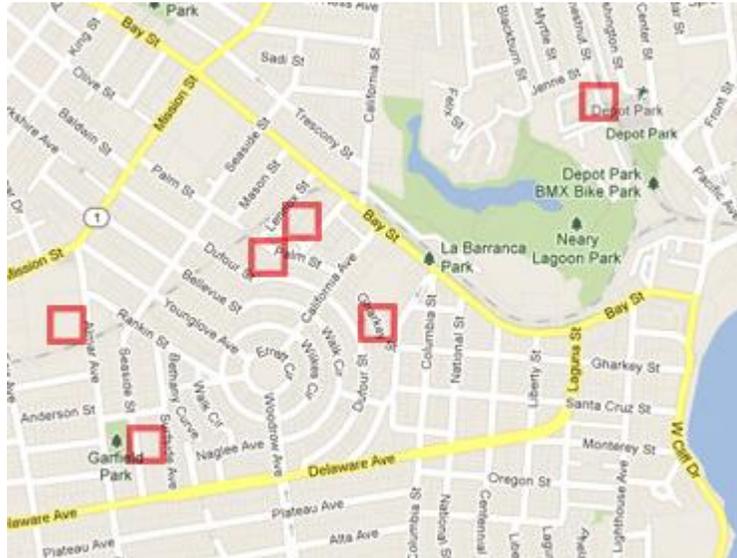
One company using big data and machine learning to try to predict when and where crime will take place is [Predpol](#). They claim that by analyzing existing data on past crimes they can predict when and where new crimes are most likely to occur. Currently their system is being in several American cities including Los Angeles, which was an early adopter.

Their algorithm is based around the observation that certain crime types tend to cluster in time and space. By using historical data and observing where recent crimes took place they claim they can predict where future crimes will likely happen. For example a rash of burglaries in one area could be correlated with more burglaries in surrounding areas in the near future. They call this technique real-time epidemic-type aftershock sequence crime forecasting. Their system highlights possible hotspots on a map the police should consider patrolling more heavily.

QUARTERLY NEWSLETTER

To continue receiving this newsletter, please sign up online. It only takes a second, and it will keep you informed.

AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS CONT.



A screen shot of PredPol's map application. Source – PredPol.com

One success the company highlights is Tacoma, Washington, which saw a [22 percent drop](#) in residential burglaries soon after adopting the system. Tacoma started using Predpol in 2013 and saw the drop in burglaries in 2015.

Given that crime is such a complex issue with numerous causes, it is very difficult to isolate the impact any one tool has. However, [one study](#) by researchers at Predpol concluded that police patrols based on near real-time epidemic-type aftershock sequence crime forecasting (what Predpol uses) results in a 7.4% reduction in crime volume.

Predicting Who Will Commit a Crime – Cloud Walk

The Chinese facial recognition company Cloud Walk Technology is trying to actually predict if an individual will commit a crime before it happens. The company plans to use



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facial recognition and gait analysis technology help the government use advanced AI to find and track individuals.

AI FOR CRIME PREVENTION AND DETECTION – 5 CURRENT APPLICATIONS CONT.

The system will detect if there are any suspicious changes in their behavior or unusual movements. For example if an individual seems to be walking back and forth in a certain area over and over indicating they might be a pickpocket or casing the area for a future crime. It will also track individual over time.

The company told the [FT](#), “Of course, if someone buys a kitchen knife that’s OK, but if the person also buys a sack and a hammer later, that person is becoming suspicious.”

Pretrial Release and Parole – *Hart and COMPAS*

After being charged with a crime, most individuals are released until they actually stand trial. In the past deciding who should be released pretrial or what an individual’s bail should be set at is mainly now done by judges using their best judgement. In just a few minutes, judges had to attempt to determine if someone is a flight risk, a serious danger to society, or at risk to harm a witness if released. It is an imperfect system open to bias.

The city of Durham, in the United Kingdom, is using [AI to improve on the current system](#) deciding to release a suspect. The program, Harm Assessment Risk Tool (Hart), was fed five years worth of criminal data. Hart uses that body of data to predict if an individual is a low, medium or high risk.

The city has been testing the system since 2013 and comparing it’s estimates to real world results. The city claims Hart’s predictions that an individual would be low risk were accurate 98 percent of the time, and predictions that an individual would be high risk were accurate 88 percent.



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The intent is for Hart to advise authorities on which suspects are most likely to commit another crime.

Jurisdictions in the United States have been using more basic risk assessment algorithms for over a decade to make decisions about pretrial release and whether or not to give an individual parole. One of the most popular is Correctional Offender Management Profiling for Alternative Sanctions ([COMPAS](#)) from [Equivant](#), which is used throughout all Wisconsin and numerous other locations.

A 2012 [analysis](#) by the New York Division of Criminal Justice Services found COMPAS's, "Recidivism Scale worked effectively and achieved satisfactory predictive accuracy."



COMPAS has recently come under fire after a [ProPublica investigation](#). The media organization's analysis indicated the system might indirectly contain a strong racial bias. They [found](#), "[T]hat black defendants who did not recidivate over a two-year period were nearly twice as likely to be misclassified as higher risk compared to their white counterparts (45 percent vs. 23 percent)."

The report raises the question of whether better AI can eventually produce more accurate predictions or if it would reinforce existing problems. Any system will be based off of real world data, but if the real world data is generated by biased police officers, it can make the AI biased.

Concluding Thoughts and Future Outlook

The ability of AI to allow governments to collect, track, and analyze data for the purpose of policing does raise some serious questions about privacy and the threat that machine learning could create a feedback loop that reinforces institutional bias. This article wasn't dedicated to these important issues but the [AI Now Institute](#) at New York University is a research center dedicated to understanding the social implications of artificial intelligence which can provide more details about these concerns.



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While civil liberty concerns do exist, they so far have not stopped the spread of AI technology in surveillance and crime prediction. According to [IHS](#), there were 245 million professionally installed video surveillance cameras operating in 2014 and the number of security cameras in North American [effectively doubled](#) from 2012 to 2016. There is more and more data being fed to security and law enforcement agencies; it is only natural they are going to want to keep investing in more and more AI tools to shift through this ever-growing stream of data.

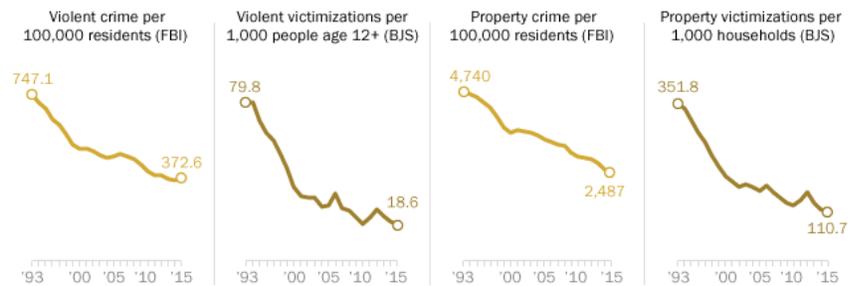
The use of AI and machine learning to detect crime via sound or cameras currently exists, is proven to work, and expected to continue to expand. The use of AI in predicting crimes or an individual's likelihood for committing a crime has promise but is still more of an unknown. The biggest challenge will probably be

“proving” to politicians that it works. When a system is designed to stop something from happening, it is difficult to prove the negative.

Companies that are directly involved in providing governments with AI tools to monitor areas or predict crime will likely benefit from a positive feedback loop. Improvements in crime prevention technology will likely spur increased total spending on these technology.

Crime rates have fallen since the early 1990s

Trends in violent crime and property crime, 1993-2015



Note: FBI figures include reported crimes only. BJS figures include unreported and reported crimes. 2006 BJS estimates are not comparable with other years due to methodological changes.
Source: FBI, Bureau of Justice Statistics

PEW RESEARCH CENTER

From PEW Research “5 facts about crime in the U.S.” from February 21, 2017

While [effectively all categories of crime have been trending down for decades](#), in major American the share of [general funds being spent on law enforcement](#) has grown steadily. In American politics, there remains strong emphasis on law enforcement. It seems that the drop in crime has possibly even created a feedback loop. Instead of a lower crime rate being seen as a reason to cut police services, it is seen as proof that law enforcement is working so therefore deserves more money.



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After all, a lower crime rate has broad social benefits for a community and real political benefit for the local elected officials responsible for budgeting. In New York City both liberal mayors like [Bill De Blasio](#) and conservative mayors like [Rudy Giuliani](#) heavily citing the drop in crime under their tenure during their re-election campaigns.

Most of these technologies which are or were mainly developed with government clients in mind have spillover benefits for private companies. The same AI security cameras used by government are also being used by private companies to protect their assets. Technology used to predict crime or automatically catch suspicious behavior can help companies with loss prevention or deciding where establish new locations



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