



## Are robot cops the future of efficient, bias-free policing?

Steven Nelson

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The era of police hiding behind bushes and catching drivers who exceed 30 miles per hour may be coming to an end. In years, maybe decades, the young officer with a quota could be replaced by a robotic cop car.

Unsympathetic to excuses and invulnerable to flirtation, the robot will flash its lights to pull you over. It will scan your driver's license, decide whether to issue a warning or ticket, and inform you of that decision before letting you drive away.

The concept is outlined in a Ford patent filing for a self-driving cop car capable of using artificial intelligence "to find good hiding spots to catch violators of traffic laws." An optional human passenger could override settings that prevent the car from breaking traffic laws itself.

It's unclear how far the idea is in development, but experts and policymakers are grappling with the concept that was quietly filed with the U.S. Patent and Trademark Office more than a year ago before recently attracting widespread attention after a blogger noticed it.

The idea's public airing comes as self-driving technology hits its stride, transitioning from preliminary testing to broader deployment for everyday use.

Uber has dispatched driverless cars to cities such as Pittsburgh, with more than 2 million miles driven. Waymo, a self-driving car company owned by Google's parent firm, has 4 million test miles and plans to start its own ride-hailing service in Phoenix this year. It's buying thousands of self-driving Chrysler Fiat-built minivans for rapid U.S. expansion.

Many companies have joined the rush. Tesla and Mercedes-Benz are unveiling partially self-driving cars, and General Motors plans to release a fully autonomous car without a steering wheel next year.

Ford, the robot-cop patent-filer, invested \$1 billion in the small firm Argo AI last year to develop self-driving technology as part of a five-year plan to make thousands of vehicles available for car-sharing and ride-hailing services by 2021.

Right now, self-driving carmakers have a fairly free hand. State laws create a patchwork of rules, but may soon be swept away by overriding federal regulation. Congressional lawmakers are debating bills that would expressly allow the vehicles and give the National Highway Traffic Safety Administration regulatory power over design and safety. For now, voluntary NHTSA guidance seeks to foster both innovation and safety.

Ford declined to comment on the cop car beyond a statement from Alan Hall, communications manager for autonomous and electric vehicles, who said: “We submit patents on innovative ideas as a normal course of business. Patent applications are intended to protect new ideas but aren’t necessarily an indication of new business or product plans.”

Amid technological advances, however, some experts believe real-world adoption of the concept is an almost inevitable.

“A widely-distributed, autonomous police presence is not hard to imagine. We have to ask: Do we want to live in a world blanketed with autonomous police cars?” asked Ed Walters, who teaches at Georgetown University’s law school and at Cornell Tech.

### **Why fear the robocop?**

Privacy concerns, uncertainty about the effect of automation on police jobs, and doubt about robot performance are among the biggest issues raised by people who take a dim view of the conceptual cop car.

The skeptics include Rep. Val Demings, D-Fla., a former chief of the Orlando Police Department and one of the few former law enforcement officers serving in Congress.

“One of the greatest gifts a law enforcement officer has is his or her ability to use discretion,” Demings said. “Automation has its place, but it could never replace the wisdom, courage, and compassion found in an officer’s heart and soul.”

Candace Lightner, the founder of Mothers Against Drunk Driving, said she’s outright opposed to the car, which the patent application describes as being able to use artificial intelligence to detect impaired driving.

“It kind of reminds me of a police state when all of a sudden you could be pulled over for non-dangerous driving behaviors,” said Lightner, who now leads the traffic safety group We Save Lives.

“What if I’m driving along and all of a sudden a dog runs out and I stop? I’m going to get pulled over by a police state vehicle that can’t see what’s going on? I don’t like it at all,” she said.

The Ford patent application says the car “may, through machine learning” recognize impaired driving, including through observation of a “sudden stop, meandering movement, abnormal lane changes or the like.” An optional passenger officer could arrest the driver.

Lightner said she believes police would grow complacent and defer to the technology. That could lead to the false arrest of people who are not intoxicated, the non-arrest of others who are, and a go-to argument against conviction for defense attorneys.

Dave Maass, a researcher at the Electronic Frontier Foundation, said such a car operating as a “Roomba of the roadway” — a reference to the automatic vacuum cleaner — would amplify privacy and data-security concerns already debated with police use of license plate readers.

Maass, an advocate for California legislation that would allow covering the license plates of parked cars, said plate readers generally are stationary or on police cruisers, but self-driving cars could collect much greater amounts of data.

Police have put license plate readers near gun shows and mosques, Maass noted, and can use records to reconstruct the routines of people not suspected of a crime.

Offering an example of how automated cop cars might be used, Maass pointed to local police departments in Texas that use plate readers provided for free by the company Vigilant Solutions. The scanners find people with unpaid court fines, and cops give pulled-over drivers a choice: jail or roadside payment, with a 25 percent fee for the company.

“It may result in a lot more prosecution,” Maass added, saying that in the more distant future he worries “that we will get to the point where facial recognition is good enough that faces become like license plates ... and companies track your location based on your bare face. So you take this vehicle — an automated police vehicle — that’s just driving around and grabbing the faces of everyone.”

One hurdle to broad deployment is local laws that require police departments to win approval from elected officials for new surveillance technologies. A campaign led by the American Civil Liberties Union has seen the policy adopted in many areas, including Seattle and Nashville.

“I don’t think it’s inevitable; I think people can make noise about it and let their representatives know,” Maass said.

### **The libertarians' take**

Despite talk of frightening consequences, the idea of robotic policing does have supporters, perhaps surprisingly among some civil libertarians.

Ian Adams, associate vice president of state affairs at the free-market R Street Institute, said “predictability from within policing cuts both ways, but likely cuts favorably overall.”

“You will have fewer pretextual stops,” he said. “Once expectations are adjusted, you will have fewer issues with cops pulling over a car because they don’t look like they fit [in a neighborhood] or tailing a car for miles waiting for them to do something nominally wrong.”

In addition to reducing the potential for racial bias, Adams said a recent experience with a self-driving Uber vehicle in Pittsburgh made him realize “public policy will have to evolve” alongside the rise of automated vehicles.

Adams recalls going about 35 miles per hour over a bridge where cars with human drivers were accustomed to driving more than 50 miles per hour.

“You will see reasonability standards put into black-and-white traffic laws,” he predicted, such as a more flexible definition of stopping and a possible deviation from “bright line speed limits.” He believes increased civilian use of self-driving cars over the next few years will force changes in traffic laws before police broadly deploy their own autonomous cars.

Adams, who was involved in California’s legislative process of adopting self-driving rules, also anticipates new rules for data protection. “It’s going to be so much easier to collect massive amounts of information from these platforms,” he said. “But I tend to be less concerned about collection than use.”

Julian Sanchez, a senior fellow at the libertarian Cato Institute, said the vehicles could offer a dramatic improvement over current policing practices.

“This actually seems like an improvement on traffic cameras in one respect, assuming they can make it practical in the field, in that the patent has a mechanism for scanning a driver’s license,” he said. “Traffic cameras typically have to assume that the driver of the car — and thus the person liable for fines or penalties detected by the camera — is always the registered owner.”

Sanchez said, “There are also potentially big benefits for equity, privacy, and safety — for both police and drivers.”

“Having trained police officers who spend their time handing out traffic tickets is a pretty bad use of resources,” he said. “If we can offload the decision about who gets pulled over to an algorithm that only sees data about driving behavior, that’s a simple way to radically reduce both the reality and the perception of ‘driving while black’ stops. For similar reasons, it should cut down on pretextual stops where some minor, possibly imaginary infraction is used as an excuse to detain someone and poke around their car for other reasons.”

Sanchez predicts more safety for the public and for officers. Cops would not have to fear violence from drivers during routine traffic stops, as robots would handle them, and drivers would no longer have to fear “the sort of cop who seems to get a thrill out of behaving like a bully” or “a jittery cop shoots someone during a traffic stop for no real reason,” he said.

“It would probably be better for police-community relations generally if the awkward process of being punished for minor infractions weren’t the most common personal interaction many people have with police officers,” Sanchez said. “On net, this sounds like a good thing on many levels.”

Ford, of course, may not be the only company interested in making a robotic cop car.

“I’m skeptical that this idea satisfies the patentability requirements of novelty and nonobviousness,” said Bryant Walker Smith, a professor of law and engineering at the University of South Carolina and an affiliate scholar at the Center for Internet and Society at Stanford Law School.

Regardless, Smith said, the idea’s likely to be one part of a larger shift.

“In the future,” Smith said, “the placement of all kinds of inward and outward facing sensors on motor vehicles, aerial drones, and infrastructure — plus the connection of these sensors to the cloud — will enable far more aggressive public and private enforcement.”