

# Predictive Policing

AI and ML algorithms for law  
enforcements authorities



**PredPol** is a predictive policing company that provides software for predicting specific crimes probability. The machine learning algorithm used to make prediction is based on 3 main data features:

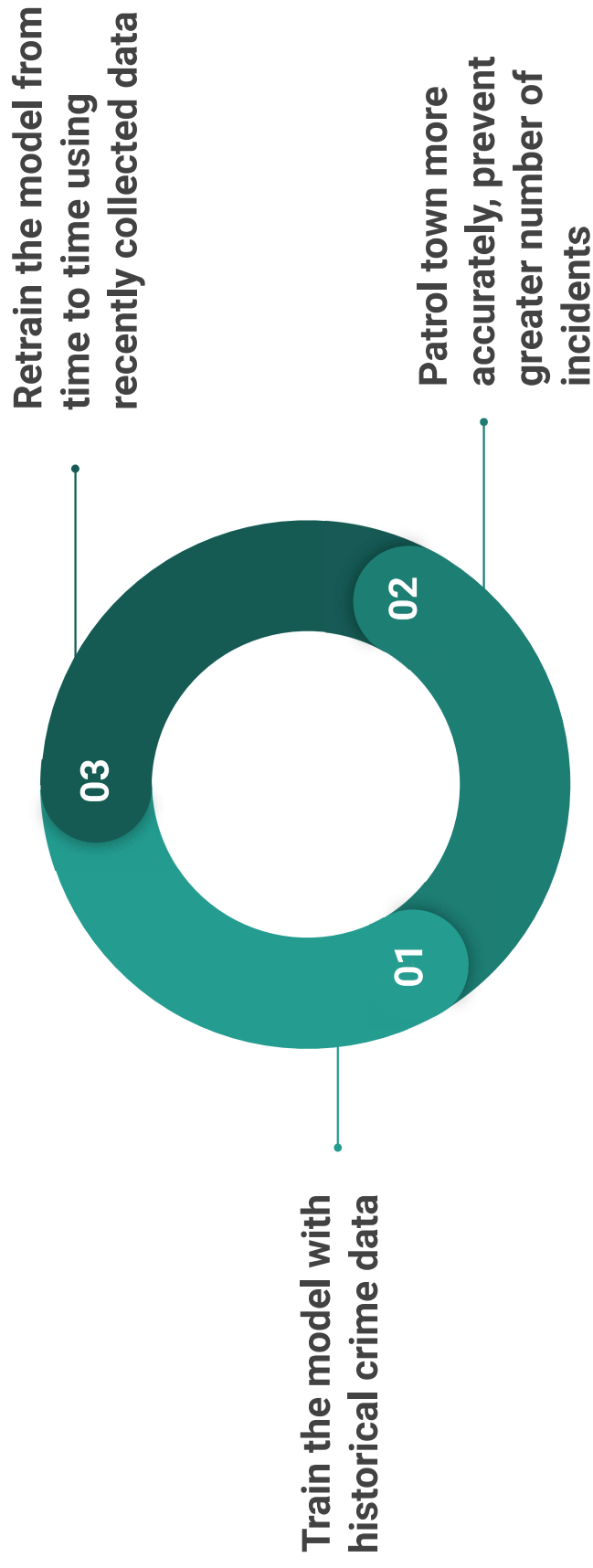
- crime type,
- crime location,
- crime date/time

Data comes from historical registers and reports.

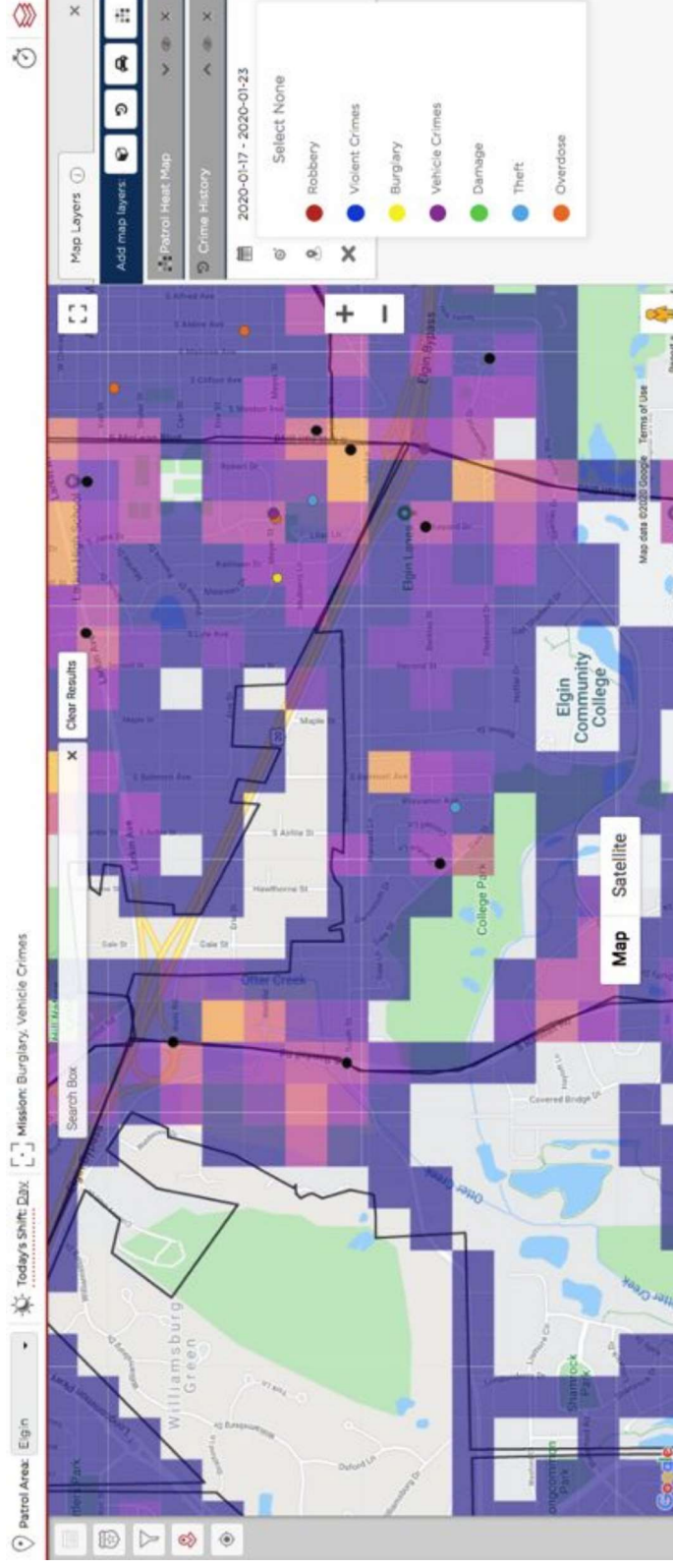




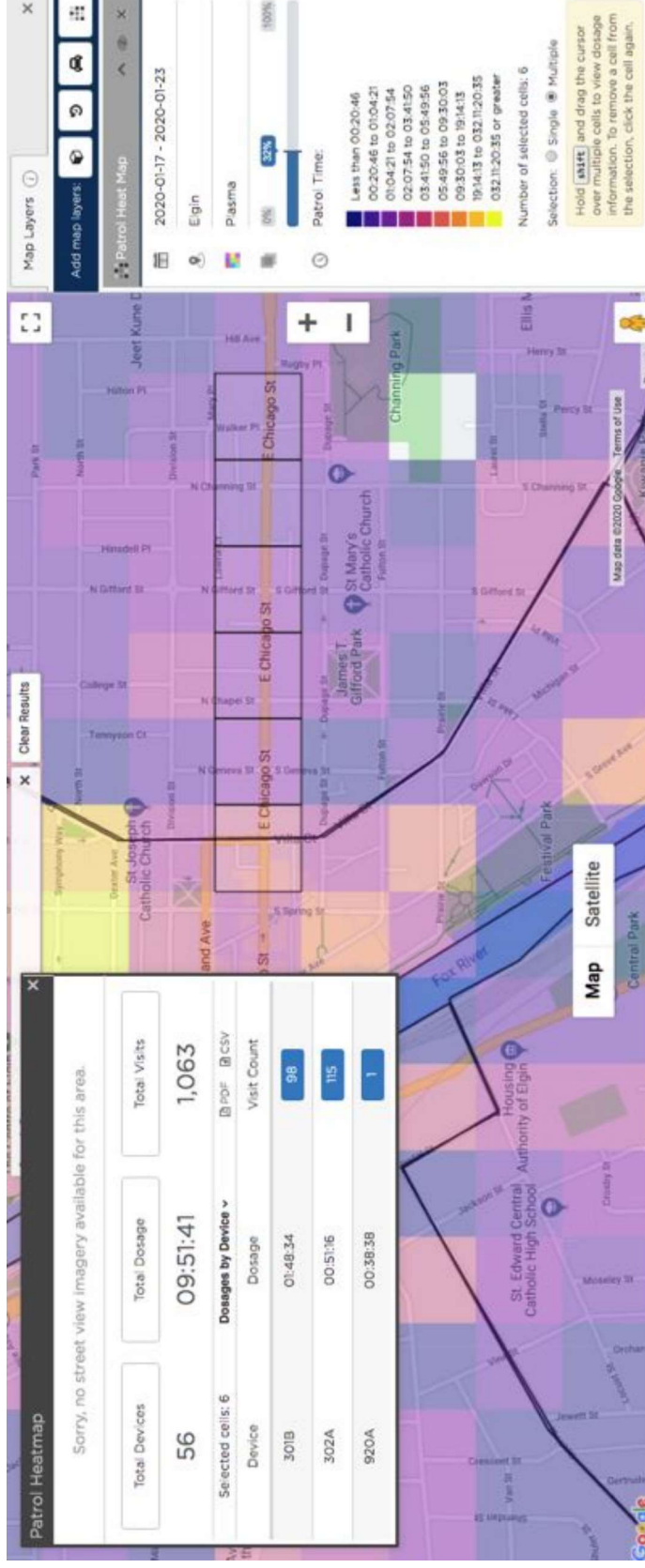
# Process



# Probability map of specific crimes



# Patrol heat map





# Reading, Pennsylvania - 2011

Due to 2008 crisis and later recession there was the highest poverty level in the whole US - 41,3%. Despite the rising crime rate, economic situation forced local authorities to reduce 45 police officers positions.

As a result local police commander decided to invest in PredPol software. The investment resulted in significant increase in arrestments number.

So everything is fine,  
software is helpful and  
we can finish there?

Well, not exactly...



# Is PredPol a racist?

OK, statistics of police performance and effectivity were much better at the first glance...

Later researches showed that due to application of predictive software number of arrestments raised for the Black and the Latians and it became much higher than for the White. Police patrols were directed to poor districts inhabited by black people more often than to others.

As a result lots of crimes in those city sectors ended up with arrestment while in others sectors they simply stayed unnoticed - which doesn't mean that they didn't happen.





Some departments argue that PredPol targets specific area, not individuals but since a lot of cities are very segregated in terms of human race, in fact it targets specific race...

What's more, it was found out that in years 2012 - 2014 "broken windows" was a part of the PredPol "best practices guide" and crimes of this kind are more common within mentioned poor districts. Later released reports show that these kind of policy is simply inefficient and doesn't reduce crimes in general.





# Conclusion

This example shows that when using and relying on AI we have to be very careful and examine if our proceeding is correct very often.

It doesn't mean that AI is evil and we should avoid it. What it means is that it is crucial to stay aware of possible consequences and try to eliminate such flaws like this related to PredPol discriminating Black people.

Hopefully they improved the algorithm and these days it performs fairly.

# Resources:

1. <https://blog.predpol.com/> - photos and informations about how it works
2. [https://www.vice.com/en\\_us/article/d3m7iq/dozens-of-cities-have-secretly-experimented-with-predictive-policing-software](https://www.vice.com/en_us/article/d3m7iq/dozens-of-cities-have-secretly-experimented-with-predictive-policing-software) - article about described issue
3. <https://www.cbsnews.com/news/artificial-intelligence-racial-profiling-2-0-cbsn-originals-documentary/> - next article
4. Cathy O'Neil, "Weapons of Math Destruction" - very interesting book about stuff like that, definitely raises awareness.

