

# **Chicago Crime Prediction System**

(From an Alternate Perspective)

Jarrold Johnson

University of Houston

Data Science II (COSC4337)

May 4, 2021

(The general theme of this report is purely fictitious and does not represent the desires, thoughts, or efforts of the author, students, teaching staff, or university.)

AI Alphabet Inc., and particularly you as its owner, is planning to become the world's first industrial supervillain. Images and thoughts of supervillains from television may immediately come to mind:



Although it would be great, you don't have magic wands, spells, or wizard blood to make this a reality.



While the dark side may truly exist, there is no mystical Force you can wield to bring your subjects to their knees.



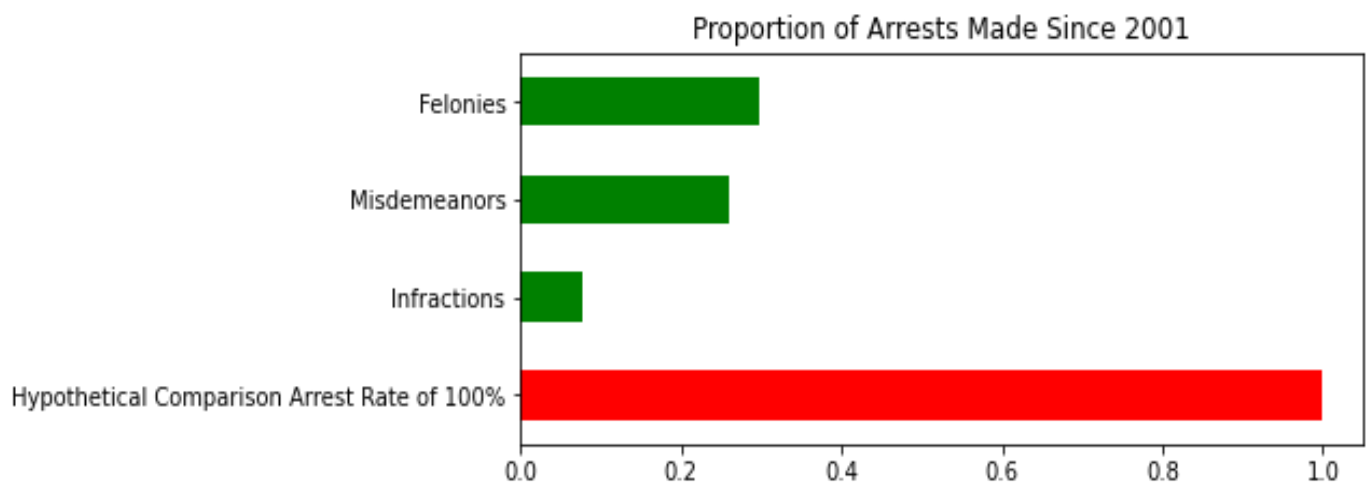
Lastly, you are not an alien transforming robot with artificial intelligence capable of creating your own army of warriors to do your bidding.



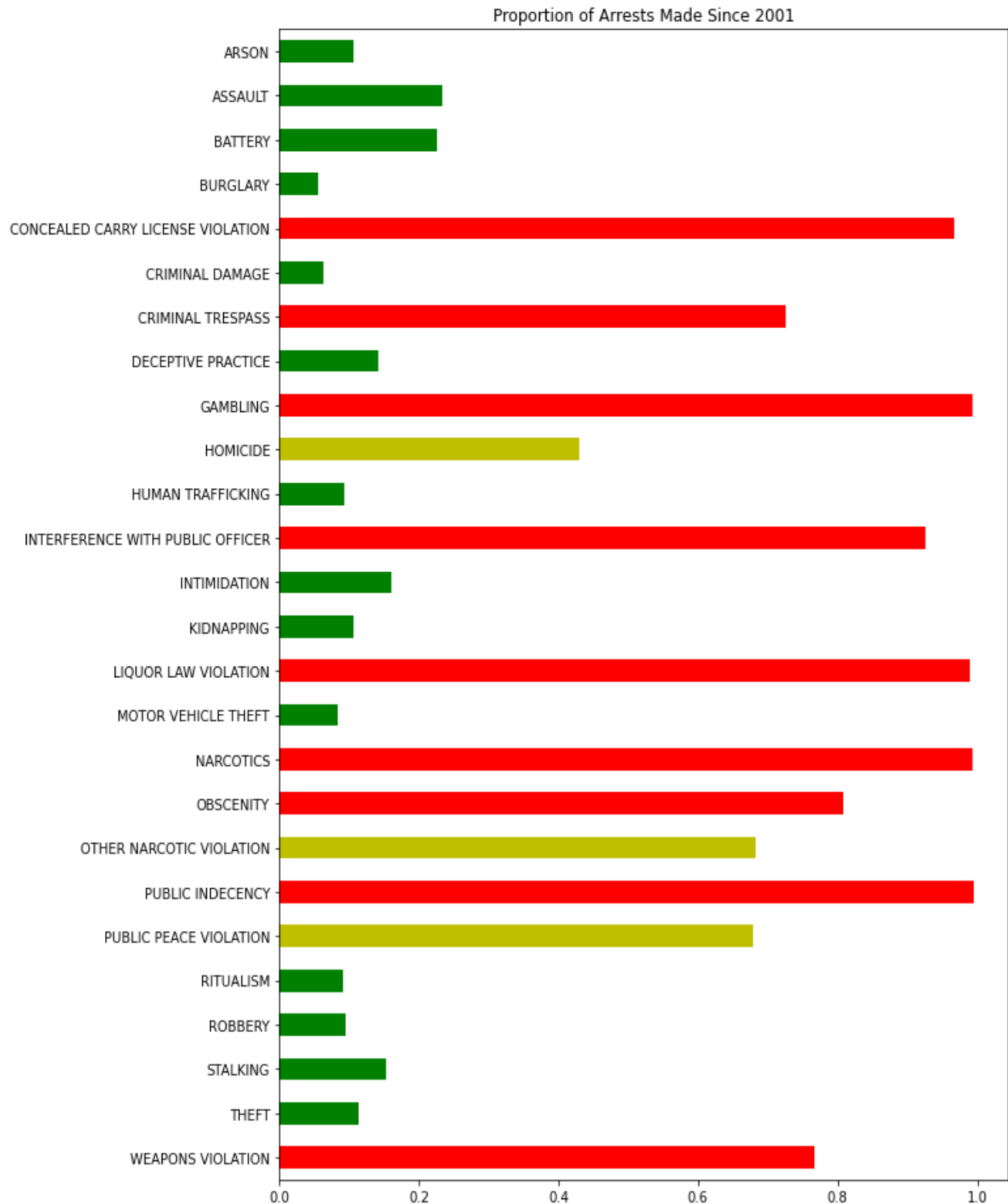
This is more like it! This is something you can work with and work towards. The Joker was just another citizen who was able to use the available resources and unite his fellow citizens in the call to anarchy.

Imagine being able to convince all the hardened criminals in America's most deadly city to join under your control and realize your joint desire of raining down chaos and anarchy onto the city and its unsuspecting citizens. The research presented in this report, combined with your company's influence and wealth, can give you the tools to make that a reality. Using the data and predictions from this research you can organize, and recommend with confidence, crimes that could be committed having the least chance of associated arrest based on true historical crime data from Chicago. Like the fantasy supervillains mentioned above, you could be able to grasp a resemblance of their fantasy powers. Something like a mystical force, magic wands and spells, and artificial intelligence leading an army of warriors could in fact be comparatively possible. With the research-provided artificially intelligent prediction algorithm and accompanying data that can act like a magic wand and spells to give you the recommendations of crime, you will be enabled to unite a force of warriors within Chicago that can achieve the goals you set forth.

To begin, you could attract existing local criminals that specialize in the types of crimes that this research has identified to be low risk in terms of arrest. You could attract them by offering the artificially intelligent predictions and lead them to join forces with you by allowing them to continue their specialized criminal behaviors under your direction based on the lower statistical arrest rates and related crimes provided by this research. Just as a typical company holds mass hiring's for employment, you can conduct more discrete mass interviews and hiring from an alternate perspective using this business model as the basis for employment. This research has revealed a list of Chicago's reported crimes since 2001 and their associated arrest rates. Initially, you could use the following visualization to show just how few of Chicago's felonies, misdemeanors, and infractions have led to arrest since 2001. This surprising information could be very motivating to prospective employees and could build confidence in your knowledge related to criminal activity in Chicago.



As you interview prospective employees, you could select them based on their past exploits that match the labeled crimes with green proportions in the following visualization of Chicago's historical crimes and associated arrest rates.



The above visualization was conveniently created to show which specific crimes had the lowest arrest rates. These would be the ideal activities for your business and your prospective employees to begin acting on. As your company and work force grows:

If you require an asset;

-Burglary, Robbery, Theft, Motor Vehicle Theft, and Human Trafficking could all be lucrative options having minimal arrest rates.

If a citizen has information or influence that would serve you;

-Stalking, Deceptive Practice, Intimidation and Kidnapping could all be lucrative options having minimal arrest rates.

If someone resists or threatens to reveal you;

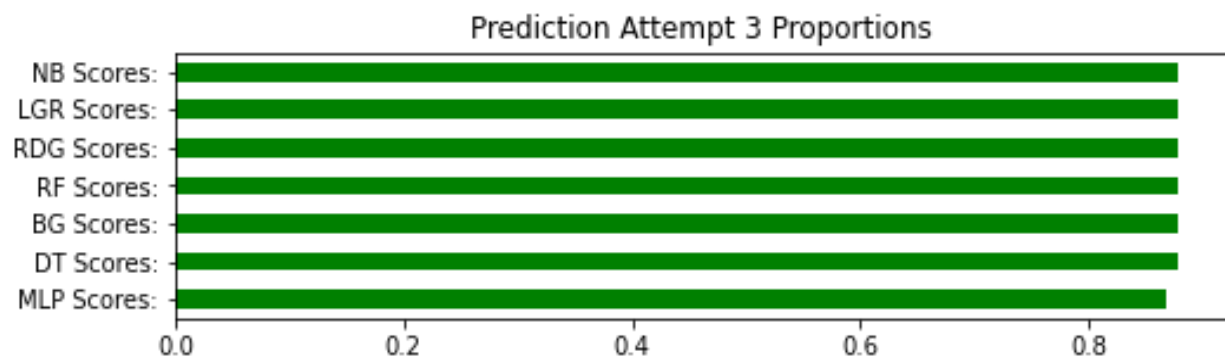
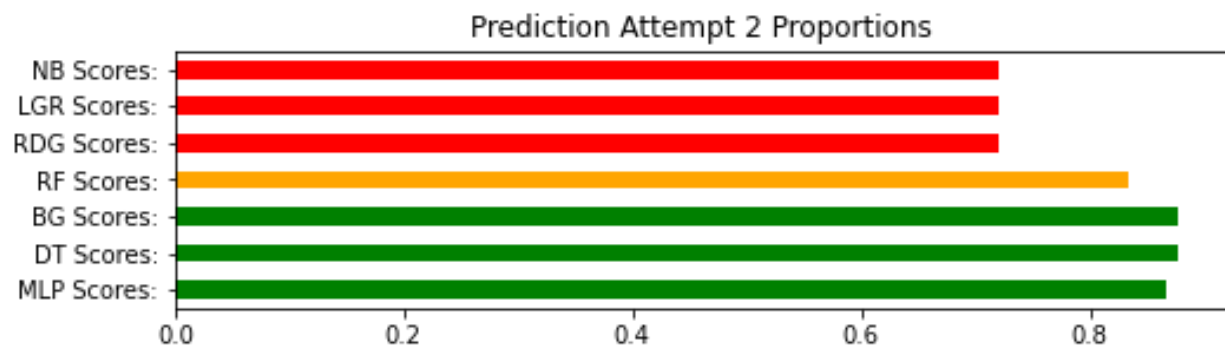
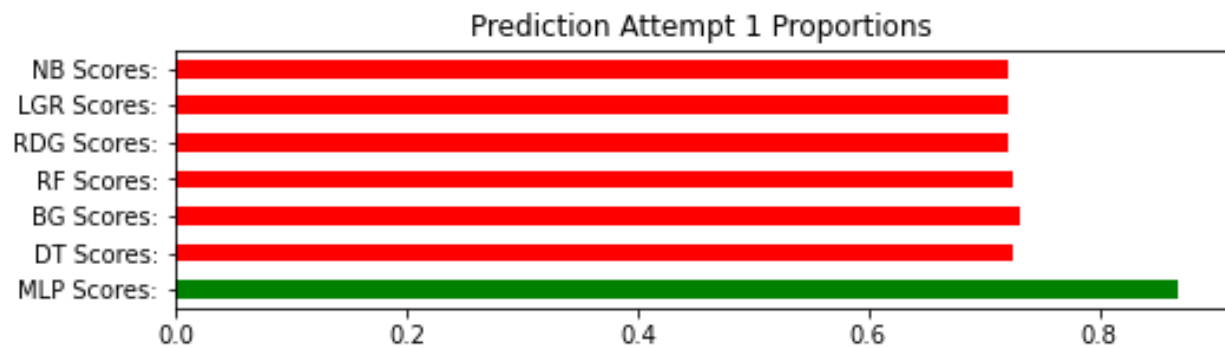
-Assault, Battery, Intimidation, and Kidnapping could all be effective options having minimal arrest rates.

Finally, if someone becomes an unsurmountable obstacle;

-Arson, Kidnapping, and even Homicide could all be effective options having minimal arrest rates.

This is very powerful and attractive information to a company with goals like AI Alphabet Inc.; however, the true power comes from the predictions.

The data focused on in this prediction research is crime type, the police beat the crime took place at, and whether an arrest was made or not. Seven different methods (listed on the left of chart as Scores) were used to predict arrests based on crime type and beat. Using those seven methods, three attempts were made to produce predictions resulting in at least 85% accuracy (listed along the bottom of chart as proportions).



As the above prediction visualizations show, 85% accuracy was able to be exceeded with all seven methods by the third attempt. Notably, the method that initially showed the most promise ended up being the least effective. I am confident more research could lead to even higher proportions of accuracy in the predictions. Furthermore, continued research could be able to predict which specific beats are associated with the lowest arrest rates, and specific time windows could possibly be included in the predictions. These predictions would become very powerful and effective tools for you to use to accomplish your company's goals. With an average of approximately 1000 reported crimes happening daily since 2001 in Chicago, your company coupled with this research is uniquely positioned to be highly successful in regard to reaching its goals.