DATA ANALYTICS AND PUBLIC SAFETY
Date: November 27, 2020

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KEY EVENTS

On November 27, 2020, UrbanLogiq CEO Mark Masongsong spoke on the topic of Data Analytics and Public Safety at the 2020 CASIS West Coast Security Conference. The presentation was followed by a question and answer period with other speakers. The key points of discussion focused on the challenges of artificial intelligence and machine learning technologies and their utility towards public safety.

NATURE OF DISCUSSION

Presentation

Mr. Masongsong centered his presentation on examples of analytic technologies that were designed for one purpose yet proved useful for others. The utility of mined data was highlighted, proving remarkably beneficial in some cases and ethically questionable in others. Masongsong conceptualized the link between social amenities and social ecosystems planning, and national security. According to Masongsong, data analytics might aid in identifying types of policy decisions that governments can make to best address societal challenges such as the drivers of criminal behaviour.

Question Period

The question period focused on issues of corporate data security, data governance, and concerns surrounding privacy and the ethical use of data.

BACKGROUND

Presentation

Artificial intelligence concerns teaching computers how to perceive and understand the environment similar to a human but with varying levels of

sophistication. Machine learning is a more advanced subsection of artificial intelligence that relies on patterns of data. With more advanced forms of artificial intelligence, two things seem to drive their power: the amount of data available and the power of the associated computer. Due to the increasing amount of robotic and mobile devices in use, it is important to note the amount of data that is now available and being collected.

Mr. Masongsong outlined several cases in which technology was developed for social and economic purposes but could also be used for public safety:

- Sensors deployed in sewage systems that can sample 55,000 different chemicals; originally used to detect disease outbreaks, but it could also be used by law enforcement to detect drug usage.
- Computer programs in the city of Chicago can predict which restaurants are likely to serve spoiled food by analyzing comments on Twitter, Yelp, and other social media platforms.
- A possible project between UrbanLogiq and the US State Department considered exploring comments on Twitter, Facebook, and other social media platforms to predict unemployment rates months in advance. That data would assist in predicting civil unrest due to increased crime and unemployment rates. Similarly, governments could allegedly use similar methods to warn their embassies worldwide of security risks based on predictions of economic upheaval.
- UrbanLogiq has worked with the World Bank in a project that used data from local cellphone usage to predict famines. The data indicated that in poor areas of Sub-Saharan Africa, individuals attempt to save money and decrease cellphone usage when they feel insecure about their income — e.g. they think their farm is at risk, and famine is a possibility. The same data could be used by law enforcement to predict civil unrest.
- The Chicago Police Department controversially started tracking known gang member activity on social media. If, for example, gang members add a 13-14-year-old youth to their Facebook accounts, the Chicago Police Department would consider intervening and talking to the child's parents before they are initiated.

Regarding technological advancements, China has arguably demonstrated a high level of proficiency. In a recent pursuit of a fugitive, a Chinese camera was able to detect the individual's face in a crowd of 60,000 people. This capability demonstrates the power and accuracy of highly granular computer vision.

Similarly, an Israeli company indicated that they have built a computer program that is not only capable of facial recognition but also recognizes facial expressions. An experiment analyzing footage of President Obama leaving his vehicle showed that 99% of spectators would smile. Therefore, the program could flag people not expressing happiness and monitor for potential threats.

Most of UrbanLogiq's work is related to collecting social amenities and social ecosystems data, as well as analysing it to discover what directs people towards a positive outcome in life. The same data can arguably be used for public safety and crime prevention. UrbanLogiq has explored the potential of using this data to identify what types of social dislocations can make people vulnerable to recruitment by Al Qaeda, ISIS, or similar extremist groups.

Mr. Masongsong emphasized UrbanLogiq's commitment to transparency. According to him, people tend to be suspicious of how data is being used, but this can be mitigated by providing honest reasons for data collection. In UrbanLogiq's case, cell phone data is collected to improve traffic light timings and public transit schedules. Conversely, law enforcement and intelligence agencies collect data to track and predict criminal behavior, and that is not easy to divulge. However, despite the concerns, transparency seems to be the only way honest discussions can happen about what is the right balance between privacy and security.

Question Period

Data is becoming available faster than people are able to test nightmare scenarios. Nonetheless, those skilled in building advanced data analytics systems appear to prefer working at Google than with criminal organizations. However, democratization of scale is concerning, and it only takes one person with the right skillset to cause significant damage.

Restrictive regulations are important, but they might hinder technological innovation if compared to governments that do not have similar restrictions (e.g., China), thus creating a disadvantage which concerns some national security experts in the US.

Regarding corporate security and data governance, UrbanLogiq designed a system that requires an undisclosed number of people to put in their password, a two-factor authentication token code, and biometrics at the same time to access or download sensitive data.

KEY POINTS OF DISCUSSION

Presentation

- Data used to improve quality of life can also be used by law enforcement and national security in crime prevention.
- Predictive analytics can be used to address crimes before they happen; however, it raises certain questions: Can law enforcement use big data and artificial intelligence to effectively predict crimes before they happen? and, is there an obligation to stop crimes before they happen, or is that an infringement of people's privacy and freedom?
- As much as data science shows the predictive power and accuracy of data analytics, it does create ethical questions of determining a person's future based on a mathematical algorithm.
- Artificial intelligence systems and machine learning are not actually smart; they are just powerful. There is a big difference.

Question Period

- As data analytics and technology become more available, there is a growing concern about their use by non-state actors.
- Advancements in data science raise ethical questions related to who will purchase and use these products.
- There is a tension between innovation and restrictive policies; governing bodies must decide if innovation is worth loose restrictions.