

SIT719: Security and Privacy Issues in Analytics
Assessment 1: Privacy/security issues report
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Executive Summary

Cambridge Analytica (CA) is a British data firm partly owned by the family of Robert Mercer, a billionaire American hedge fund manager and Republican donor, and supported by former Trump senior adviser Stephen Bannon who was the vice-president of this firm. The company, which began working for the Trump political campaign to help in changing influencing the behaviour of voters in the 2016 U.S.A. presidential election campaign audience behaviour and predict the personality and political leanings of every adult so-called “psychographic” profiles using consumer data from social media and polling combined with behavioural science. The organization has been also been drawing flak for its alleged role in helping the left side in the BREXIT referendum. The whistle-blower for this case is Cristopher Wylie(ex-employee of CA) made the allegations that the firm is alleged to have harvested data of tens of millions of Facebook users without permission in order to design a software to predict and influence people’s voting preference. Gained inappropriate access to data on 50 million Facebook users.

In 2014, Dr. Aleksander Kogan, a psychology professor at Cambridge University, was allegedly paid \$800,000 by CA to develop an application, this is your digital life, to harvest data of Facebook users. Kogan built a Facebook app that was a personality prediction a Facebook-based quiz app. Kogan’s firm Global Science Research (GSR) offered users the small amount of money to complete a survey on the condition that they grant permission to access their personal details through Facebook. Although the app was downloaded by 270,000 people (these people granted permission for data collection), it extracted personal information such as status updates, private messages, the city of residence, the content they had liked, and some more information. It is not only collected data from people who took the quiz but there is a loophole in Facebook API that allowed it to collect data from the Facebook friends of the quiz takers as well.

As Facebook prohibited the selling of data collected with this type of method, but Kogan sold all the data collected through his app to CA. In passing this information to Cambridge, Kogan broke Facebook's policies, and Facebook has suspended his account as well.

It then collated their data and made assumptions on their characteristics, demographics and similarities to the original consumer. This helped Cambridge Analytica to build personality and psychological profiles of millions of people. These data were allegedly used to tailor its political advertisements for a group of individuals, whose likings and interests were already known to them. CA performed a variety of services including designing target audiences for digital advertisement and fund-raising appeals, modelling voter turnout, and determine where trump should travel to get more support.

There was a video sting broadcast by UK's Channel 4 News, Cambridge CEO Alexander Nix is seen boasting that his data-mining firm played a major role in securing Donald Trump's victory in the 2016 presidential elections.

Facebook has drawn criticism for its alleged inaction to protect users' privacy. US and European officials have called for Facebook chief executive Mark Zuckerberg to explain how personal information of Facebook users ended up in the hands-on Cambridge. In the UK, Cambridge Analytica and Facebook are already the subject of an inquiry into data and politics by the Information Commissioner's Office and the Electoral Commission to investigate what role it played in the BREXIT referendum. WhatsApp co-founder Brian Acton - who joined Facebook in 2014 has joined calls to #DeleteFacebook in the wake of the controversy.

Privacy Issues

Privacy is a basic human need. Imagine a situation that if you don't have the privacy when you wanted to go to the toilet. Wouldn't make you uncomfortable? Anonymous voting is the central principle for the democracy. If there is no privacy in voting, then whether we are able to select our best candidate. We know that because of privacy we are able to vote freely and select the best person to run the country. Prevention of undesired disclosure is one of the crucial elements of maintaining and controlling privacy.

Having understood what privacy is, let's talk about a little bit about how data science today impacts privacy.

There are three main drivers of privacy violation.

- **Surveillance**-Surveillance could be government agencies doing this for national security agencies or private enterprises, say security cameras, logs of various sorts.
- **Advertising**-There's advertising if a company can show you a focused, personalized, relevant and, everyone wins. But if the company shows you ads that annoy you, then it's a loss. Often, we look something on the web like pair of shoes. After some days, you will find ads for similar to that thing. It is because of cookies.
- **Introduction**-Finding out something about a person. Whether this person is a prospective employee, a prospective borrower, a prospective date. You don't know somebody, you figure out what kind of person that be. For Example-Credit Risk Modelling, Ok cupid (dating app) uses machine learning algorithm to predict compatibility between partners. There is some kind of the bias in the algorithm.

End users have a responsibility to protect their personal data and they must be mindful of their digital footprints. However, I strongly believe that we shouldn't place the burden of the privacy on the individuals. Companies need to protect privacy by default.

We also need to make the proactive design when making these data technology products. Company should invest some time into creating privacy plans and privacy policies. The information of Australia offers some great tool to help companies to build a privacy plan.

Privacy issues in relation to the Cambridge Analytical case

Do you know what to do if your data privacy rights have infringed upon? I think most of us have answer NO. We know, Loss of privacy means loss of control over data. But, this case has brought into public view a lot of things that people just had no idea was just the standard way of operating and doing things in the Internet. But this highlights a larger debate over how much users can trust Facebook with their data. And the developer was able to exploiting a new loophole in the app to gather information about people and friends — without them knowing.

Reading one article I have found that there's a tension between the security team and the legal/policy team in terms of how they prioritize user protection in their decision-making, said by one Facebook employee.

Dr. Alexander Kogan maintains that everything he did was legal and he has having a good working relationship with Facebook.

Alexander Nix is saying we had never held Facebook data obtained against social norms, we are just using Facebook to promote activities, and events like the other companies do. The board of CA has suspended Nix from its duties until all the investigations has been done.

Steve Bannon is saying "I didn't even know anything about the Facebook mining."

Mercers were hiring an independent investigation to prove that they did nothing wrong in funding Cambridge Analytica.

Facebook and Cambridge Analytica (CA) is denying all the allegations in the exploitation of people's data put to them.

Currently, there are lots of investigation is going on different countries regarding this case.

Ethical issues and Analytics

Analytics and Artificial Intelligence (A.I) are pretty evident that they are the amazing source of digital transformation. Actually, when there is an innovation, ethics and laws are chasing the technology. Law can never move as fast as business & technology. There is always a strained relationship between the technology and law. Some Law tells us the rules how we should govern the rights and responsibilities of individuals, organizations and government. For example-GDPR, privacy law, EU General Data Protection Regulation, the ISO 2700-1 and ISO 2700-2 standards, and Australia privacy and data protection act and many more laws. This laws will help in preventing the citizen from individual privacy. The issue is that there is little of any law to regulate how the data is collected, managed, shared and used for the story. Sometimes, there is lack of the law exists, in that cases we should follow some ethical practices. Let's just talk about what it means to be an ethical person. The first thought that came in the mind is that, you will take care of the well-being of the people. For example, ethical principles stop me from stealing the wallet or torturing someone. In the context of data ethics is the study of how data affects human well-being. We know this has some positive and negative ways. These ethical principles will help us to distinguish what is wrong or what is right. Ethics are not the laws. Ethics help in the creation of the law. Laws may be used to enforce ethical behaviour. Every principles and law that are related to data analytics are built on the observation about a particular value, something that makes life go well for human beings. What it means to think ethically, we need to understand the values underlying those theories. So, let's talk about those values.

I think there is the five-value framework that we need to take care when we are making ethical policy.

Values based on the well-being of other people.

- **Non-suffering-** So what makes people valuable is that they are capable of suffering. They can feel pain, physical, emotional if other kinds of things won't. Because if they will suffer then I have to think about them before I can act.
- **Autonomy-** Something like people are able to control their own actions, to make their own plans, to live the life they want to.
- **Equality-** Everyone is equal to me. There is no superior or inferior to me.

Value based on well-being:

- **Character Excellence-**Part of being a good person and character.
- **Trust-**Trust is something that makes the life of companies go well. If you have a reputation of the liar then your company is not going well.

Ethical issues from Cambridge Analytical case

Today we know that there's an activity tracking, both on and off the web, given that the number of online profiles, registrations, in personal devices and logins users make every day, it is no wonder that many people's data is collected by merchants, service providers, sensors all around us and social networking sites like Facebook, Twitter have a considerable data about me. Now, all these sources will collect vast amounts of data. And these collected data are the things that get used to doing the privacy harms or ethical harms to us. To understand some of these concepts we need to discuss user agreements when we all sign use the software or we use the websites because usually these things are written in such a way that we are pretty much giving more shared data information to these companies.

Furthermore, since privacy agreements are often pages & pages of fine print that is unlikely anybody would actually read. Some apps ask for more information than the required because they are free. Apps that you run on the mobile phone that needs data about you to operate. And most apps collect data about you. The problem is that they don't tell that your data has been collected. For Example-Image management app doesn't need your location data for any conceivable reason.

The truth is, no data was taken which was not already publicly available. Facebook denies that this data transfer was a breach. In addition, a Facebook employee said "Protecting people's information is at the heart of everything we do, and we require the same from the people who operate apps on the Facebook". While the media has been quick to label this incident a data breach, it's more a question of ethics, rather than legality. I think that this type of scandals is crucial for the fundamental and essential change in people's perception towards their privacy, security and protecting their own data. People will often not care about the privacy until they have some strong reason to do so.

Facebook is often in the firing line when it comes to issues of privacy, but it actually does a good job of ensuring our data is only used for targeting purposes, rather than anything inherently personal like our religious or political beliefs. Despite this, Facebook founder Mark Zuckerberg has come out and apologised for Facebook's handling of this issue, accepting some blame for the misuse of users' data. The way data was collected went against Facebook's agreed terms, and certainly raises questions about the morality of this method of data capture.

It is important that we do follow right practices. There are many ways in which companies do things go wrong. Ethics are the rules that we voluntarily follow because it makes the life easier and makes a world a better place for all of us. I am happy for these companies if they use my data to know how to serve me

better but I really don't want to share these information with those who wanted to use in mischievous way.

Conclusions

The big data revolution is inevitable. Over the very short period of time, the age of big data will bring lots of socio-economic revolution, because, big data will reorganize the way we live, work and interact socially. And it is not that companies really watches everything about you or not but the question is how our behaviour impacted in the future when there is a data breach. If something like happens in the future, then it's a serious abuse to our privacy and ethics.

Recommendations

Prevention is better than cure. By following these some privacy tips we can prevent this type of scandal happening in the future once again.

Prevention steps for the individual

- Remove third-party apps that you no longer use and restrict ad preferences
- Adjust the amount of information that you provide with third-party apps and only keep necessary personal info
- See details on how the app is using your information, click App Privacy Policy
- Limit sharing settings and prevent your friends from sharing your information
- Use strong unique password

Prevention steps for the companies

- Don't avoid a "Privacy by design". Companies should always make privacy part of the product development lifecycle.
- Proactively invest in data security.
- Sign non-disclosure agreements (NDAs) where applicable and strictly adhere to the terms of signed NDAs.

- Avoid file-sharing programs or restrict the use of USB memory devices or use encrypted ones.
- Be responsible with social media.
- Data should be backed up daily to a secure cloud service or remote server.
- Use a Secure Sockets Layer, SSL, an encrypted link between a web server and a browser.
- Educate employers, users by promoting data protection.

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