What's up with security?

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Abstract

Summary: The purpose of this assignment is to get an idea of how security affects products, which in turn affects not only the companies behind them, but also the consumers and can have effects on a societal scale.

Intended learning outcomes: The aim of this assignment is

- to *reflect* on the effects of security, or lack thereof, on both individual and society.
- to *value and argue* about the responsibilities of engineers.

Reading: To be able to reason and have a discussion, we will have some ethics guidelines as a base: *Code of Ethics: ACM Code of Ethics and Professional Conduct* [Assa], *Software Engineering Code of Ethics and Professional Practice* [Assb] and *IEEE Code of Ethics* [EE].

First, you must read up on the influence campaigns during the 2016 US election [SM18]. Then you must read up on the Cambridge Analytica scandal [e.g., Val18; CG18; RCC18; Tha18] and the Mirai botnet incident [Sch16].

Finally, you should search for and read current news articles of your own choice illustrating the problem of lacking security.

1 Introduction

Our world becomes increasingly dependent on computer systems, it is thus important that those who can affect these systems do that in a responsible way. But what is a responsible way, what are the limits? This is the topic of ethics, the reasoning about moral obligations. The purpose of this seminar is to discuss what those responsibilities are and where the limits are.

2 Aims

This seminar aims for reflection of how security, or lack thereof, affects products, people, society and discuss the responsibilities of engineers. After doing this assignment your should be able:

- to *reflect* on the effects of security, or lack thereof, on both individual and society.
- to *value and argue* about the responsibilities of engineers.

3 Assignment

Read up on the influence campaigns during the 2016 US election [SM18]. Focus on the reliance on technologies:

- Which technologies were used?
- Were they used correctly or 'hacked'?
- What allowed this to happen?
- Etc.

Then you must read up on the Cambridge Analytica scandal [e.g., Val18; CG18; RCC18; Tha18] and the Mirai botnet incident [Sch16]. Search for some more news articles about security and how bad security can have negative effects on a societal scale:

- What are the consequences of this weak security, what other effects can this have on society?
- Give other examples.

Use the codes of ethics [Assa; Assb; EE] as a base to reflect on the questions:

- Where does the responsibility of the engineers who contributed to these systems end?
- Should they be morally obliged to ensure the user can make an informed choice?
- Or is that totally the responsibility of the user?
- What if the design does not let the user make an informed choice?
- What if the design intentionally deceives the user to make the 'wrong' choice?
- If there is no regulation in law, is anything allowed?

Do not limit yourself to this exact set of questions (for all three parts), explore further. Write down your thoughts (reasoning, discussion etc.), that will be valuable support later.

Work in groups, discuss each others' thoughts and summarize it in a presentation (order of magnitude: around 10 minutes for presentation). Use your the news articles you searched for on your own to support your presentation with further examples.

4 Assessment

This assignment is assessed through active participation in a seminar. To prepare for this seminar, follow the instructions in Section 3. You must participate actively to pass this assessment.

The structure of the seminar will be as follows:

1. One person in each group will be chosen at random to present the group's conclusions (the prepared presentation).
2. After each presentation we will have short discussions.
3. Finally, after the last presentation we will summarize the discussions and conclude the seminar.

References

[Assa] Association for Computing Machinery. *Code of Ethics: ACM Code of Ethics and Professional Conduct*. Accessed on 4 April 2014. URL: https://www.acm.org/about/code-of-ethics.

[Assb] Association for Computing Machinery. *Software Engineering Code of Ethics and Professional Practice*. Accessed on 27 March 2019. URL: https://ethics.acm.org/code-of-ethics/software-engineering-code/.

[CG18] Carole Cadwalladr and Emma Graham-Harrison. 'Revealed: 50 million Facebook profiles harvested for Cambridge Anal ytica in major data breach'. en-GB. In: *The Guardian* (Mar. 2018). ISSN: 0261-3077. URL: https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-%20influence-us-election (visited on 17/01/2019).

[EE] Institute of Electrical and Electronics Engineers. *IEEE Code of Ethics*. Accessed on 4 April 2014. URL: http://www.ieee.org/about/corporate/governance/p7-8.html.

[RCC18] Matthew Rosenberg, Nicholas Confessore and Carole Cadwalladr. 'How Trump Consultants Exploited the Facebook Data of Millions '. en-US. In: *The New York Times* (Apr. 2018). ISSN: 0362-4331. URL: https://www.nytimes.com/2018/03/17/us/politics/cambridge-analytica-trump-c%20ampaign.html (visited on 17/01/2019).

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[SM18] Scott Shane and Mark Mazzetti. 'Inside a 3-Year Russian Campaign to Influence U.S. Voters'. en-US. In: *The New York Times* (Nov. 2018). ISSN: 0362-4331. URL: https://www.nytimes.com/2018/02/16/us/politics/russia-mueller-election.html (visited on 21/01/2019).

[Tha18] Ishaan Tharoor. *Analysis | The scary truth that Cambridge Analytica under stands*. en. 2018. URL: https://www.washingtonpost.com/news/worldviews/wp/2018/03/22/the-scary-tru%20th-that-cambridge-analytica-understands/ (visited on 17/01/2019).

[Val18] Andrea Valdez. 'Everything You Need to Know About Facebook and Cambridge An alytica'. In: *Wired* (Mar. 2018). ISSN: 1059-1028. URL: https://www.wired.com/story/wired-facebook-cambridge-analytica-coverage/ (visited on 17/01/2019).