Seminar 1 – Ethics in Cybersecurity research and practice

# Overview

The report gives a wide picture of what ethical challenges the cybersecurity is facing. The authors divide the ethical issues into 2 areas: Academia and industry. They demonstrate issues through a case study in both areas. As methods of ethical oversight, the authors present the Menlo report, the Association of Internet Research guidelines, Oxford Internet Institute - Networked Systems Ethics guidelines, code of conduct (institutional and corporate), research ethics boards (academic), policies (institutional and corporate).

# Case Study 1 – Cybersecurity within the Academia

The research project “Encore” is brought up. A research paper about monitoring levels of censorship by the usage of scripts. The script was deployed on several web servers and was spread to clients upon visit. The script was running in the background without the knowledge or consent of the clients, requesting websites likely of being censored. The success rate of accessing these sites were sent back to the designers of the script.

The researchers did recognize some ethical concerns (they limited the connection to not overly contentious sites such as Facebook, YouTube, and Twitter) but the risks were not fully understood. Asking for the user’s consent were considered too complicated (explaining enough technical aspects on multiple language). The measurement collection of the paper was attempted to be reviewed by REBs but got declined since there was no personal identifiable information included. Their decision and motivation witness of a lack of ethical awareness and methods within those REBs.

Ultimately, this research had the potential to endanger hundreds of lifes in e.g. a regime where some website or activity may be banned.

# Case Study 2 – Cybersecurity industry practice

The research group “MedSec” is brought up. The group worked with medical gear from St. Jude Medical and discovered security flaws with it. Instead of going directly to the company, they partnered up with the investment company Muddy Waters to short the company stocks before making the disclosure public. St. Jude Medical wants to protect its products and brands, MedSec must be protected from lawsuits. This is a very complex industry case which involves safety critical products, brand/reputation, large financial capitals, lawsuit against researchers, partnering and thus, invokes many ethical issues.

Ultimately MedSec lawsuited but got right in its point out, and thousands of products from St. Jude Medical were drawn back.

# Given problems

# Key takeaways

Yet, there are no widely accepted guideline or rules for the ethics of experiments. Institutions such as IEEE and ACM have developed code of conduct which could fit into the field of cybersecurity even though it is not its primary purpose. The Menlo report and its principles are developed with focus on cybersecurity, but it is wide. There is no professional code of conduct support system within the cybersecurity field like in medicine. To be able to meet the todays and future ethical issues in reviews, Research Ethics Boards must be interdisciplinary, have deep experience in ethics and computer science and cybersecurity when making the decisions. Ethical awareness in lower education must be further introduced. Ethics in cybersecurity must be taught and provided by computer scientists at higher level. Cybersecurity research ethical guidelines cannot be too harsh since the data collection would then risk being dumped in regions with lower barriers. Public and private interests combined with financial and ethical issues is a problematic area since the balance of cost, risk, ethics etc. is a spectrum impossible to frame.

Cybersecurity is a relatively new science and to constitute acceptable regulations, guidelines, policies, and code of conduct and research ethics boards for academia will take time.   
Regarding the industry sector, many problems will persist due to the complexity of mixing different parties’ interest, but a lot of ethical issues can be solved through regulations and code of conduct.

# Questions

Do you think that a code of conduct like in the medical industry could be established in the cybersecurity industry with penalties as result of violation?

Do you think ethics shall be more integrated into the computer science academia or left out to the humanities academia?