Thesis Project Portfolio

Developing a Project Management Tool for Network Migration to Improve Transparency between Enterprises and Network Experts

(Technical Report)

Facebook Cambridge Analytica Scandal: Determining Moral Responsibility With Actor-Network Theory and the Conditions for Holding Individuals Responsible

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

My technical work and STS research are closely related as they both revolve around the importance of keeping users' personal data safe and secure on the internet. My technical work improves the onboarding process of computer networking, which is the transfer and storage of personal data in a network. Meanwhile, my STS research explores the Facebook Cambridge Analytica scandal which involved the unethical sharing of personal data. Ultimately, both of these topics focus on and prioritize the importance of protecting user data with the same end goal to increase awareness of the necessity of user data protection and privacy measures.

In my technical work, my capstone team and I made improvements to a cloud-based networking onboarding system by developing a user-friendly interface that enables users to efficiently and accurately automate their network. A network engineer works with an enterprise client by gathering and transferring data in the process of setting up a network, known as this onboarding phase. Our evaluation of the existing workflow revealed several issues and gaps including a lack of streamlined communication, disorganized task management, and an insufficient understanding of networking. As a result, our design introduced three novel features: 1) a task-based structure that centralizes resources, 2) a graphical map for evaluating the status of dependent tasks, and 3) embedded learning resources for furthering knowledge of networking. Thus, our newly designed interface effectively overcomes the challenges seen between enterprises and network engineers to allow for a more straightforward and successful onboarding process to occur.

In my STS research, I explored the Facebook Cambridge Analytica scandal where the personal data of over 87 million Facebook users was exploited by Cambridge Analytica to target voters for political advertising purposes. Current analyses of the scandal are quick to blame all parties involved and fail to consider exactly how much of a role each of the parties individually

contribute to the case. Therefore, when first identifying actors with Actor-Network theory, and second using the conditions for responsibility to assign blame to these actors, I argue that Facebook is morally responsible for the scandal because it meets all the necessary conditions for responsibility. Facebook's ultimate mistake was its failure to prioritize and protect personal user data, exemplified by its lack of supervision on the third-party developers that have access to user data. These conditions for responsibility include engaging in wrong-doing, repeatedly contributing to the incident, being able to foresee the consequences, and having the freedom of action. In addition to Facebook, the other main actors include Cambridge Analytica, Aleksandr Kogan, and Facebook users, who all cannot be held entirely responsible for the incident since they individually fail to meet all four conditions for responsibility.

Learning about the Facebook Cambridge Analytica scandal in parallel with developing a networking onboarding interface was beneficial to ensure our interface is intuitive and secure enough to prioritize the protection of user data. My STS research on the Facebook Cambridge Analytica scandal taught me the protection of user data should be considered in creating any system that holds personal data. On the other hand, my technical work allowed me to view the Facebook Cambridge Analytica scandal on the internal developers' side instead of solely looking at the management and policies behind the scandal. Overall, the result of my technical work supported by my STS research encouraged me to consider the best practices behind keeping personal data safe and secure so it does not get into the hands of unauthorized entities.