

**Facilities Management Recycling Web Application**  
(Technical Report)

**Facebook Data Breach of 2018 Examined through Care Ethics**  
(STS Research Paper)

An Undergraduate Thesis Portfolio

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## **Socio-Technical Synthesis**

My technical project and my STS research project are connected through the idea of user protection and exploring the implications of the failure to do so. While both projects are independent of one another, they both have interconnected methods to design. They work together to better understand the networks involved in constructing and protecting a website and database over time. To help deepen my understanding of database and website protection, I decided to work on my technical project and STS research paper simultaneously. This paper will discuss and explain each of these projects and the benefits I found from working on them concurrently.

To address the technical portion of my research question, my team and I created a technical design of a management website and database that will be used by the University of Virginia's Facilities Management Team. This website addresses the department's troubles with collecting and storing information about waste collected from each of the University's facilities. The design is split into two components. One is building a database for the department that will store information about waste collected, employees, and waste pickup schedules. The second component is a User Interface that will allow users to add to and modify the database without manipulating it directly. My STS project addresses the lack of care by Facebook for users that contributed to the leakage of users' private information. Facebook experienced a data breach in 2018 that compromised the data of millions of users via a personality quiz created by Aleksandr Kogan. This project goes a step further with my research question by analyzing the consequences of security negligence and a lack of transparency. In this project, I explore the lack of care for users that resulted in a failure by Facebook to protect its user information.

Working on both projects together has provided significant value to my understanding of building technological products. Analyzing two related but distinct projects to my research question simultaneously has additional insight that I would have otherwise missed if I was working on one or another. The technical project helped me to understand the engineering concepts and choices involved with building a functional database and website according to the specifications of stakeholders. The STS project went a step further in analyzing how to make a product secure and protected for its users. The STS project helped me understand the ethical and security issues necessary to be taken into consideration for a successful product. My STS project also helped me to understand the value of providing transparency to users. By working on these projects simultaneously, I was able to understand the role of an engineer truly. Not only do we create new and exciting products, but we also carry the burden of the consequences of our design choices. In fact, our role is not just limited to creating a product, but it is also essential to communicate the consequences of using the product. Creating a product that meets the requirements of stakeholders is not the only step in the design process but also making sure that the product is secure and would be in safe hands is also just as important.