

Website Redesign: Increasing Accessibility and Accuracy in Search Results  
(Technical Report)

Theranos: A Failure in Care  
(STS Research Paper)

An Undergraduate Thesis Portfolio

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Bachelor of Science in Computer Science

By

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## Socio-technical Synthesis: Organizational Communication

My technical project and STS research are connected by showing the importance of transparency and effective company communication. My STS research project addressed the ethical implications of being a leader in engineering, specifically exploring the responsibilities involved in relationships to clients and employees. The research focused on an engineering failure that was largely caused by a lack of transparency, trust, and communication within these internal and external company relationships. My technical project, on the other hand, focused on the development of an internal company tool with the purpose of increasing internal company communication. Thus, both projects explore the impact of company communication, with my STS research focusing on the perils of a lack of communication, and my technical project illustrating the benefits of effective communication.

For my technical project I redesigned the Site Inventory tool to improve clarity, so that employees could more effectively learn from previous work. I interned at the company Yext over Summer 2021, and worked with a team of other interns to improve the functionality of the Site Inventory tool. The Site Inventory tool was an internal company tool that put information about past company projects into one central location. I helped to upgrade the search functionality of the tool to be natural language based, thus improving the usability of the product. By making the information within the tool more accessible, I helped improve the efficiency of internal company communication.

My related STS project focused on analyzing the moral responsibility of an engineering leader with respect to her relationships with employees, clients and the technology itself. For this section, I researched the failure of the bio-tech company Theranos. One of the reasons that I found for the failure of Theranos, was that there were systems in place to keep members of the

company from communicating with other members. As a leader, Elizabeth Holmes had an ethical responsibility to her employees and clients to recognize the company's issues with communication and create a solution. Instead, she enforced a culture where employees were discouraged from communicating transparently with clients and each other. This led to no one in the company, besides Holmes, knowing the full picture of where the company was in terms of developments. Because of the lack of shared knowledge, the company continued to feed the public lies about scientific advances that they made that did not exist. This was a helpful STS project because I was able to analyze different ways that relationships are ethically maintained and cared for by a leader.

Working on these projects together added to the knowledge and understanding gained from both. Through my STS project I explored the moral responsibilities of Holmes as an engineering leader. Learning about Holmes's ethical failures as a leader helped me understand the importance of maintaining relationships through effective communication. My technical project provided an example where effective communication was the priority of the company. By completing these two projects simultaneously I was able to understand what communication styles to emulate and to avoid. This contrast deepened my understanding of how to communicate successfully as an engineer.

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