

**Thesis Portfolio**

**CS 3240 Project: Web Application Assignment and Note Organizer**  
(Technical Report)

**Analyzing the Actions Companies with Voice Recognition Products Can Take to Protect  
Users' Personal Information and Privacy**  
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science  
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Bachelor of Science, School of Engineering

Nafeisha Tuerhong  
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Department of Computer Science

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## **Sociotechnical Synthesis**

As the technology becomes more advanced, the requirements of the user become more important. The most debated and critical subject of user experience in technology is privacy and security. The public wants more privacy as they encounter continuous scam calls, leak of personal information, and hidden security cameras that significantly affects one's personal life and safety. On the other hand, companies want to make technologies as convenient and inclusive as possible which requires a certain amount of personal information access. Both sides have valid points that reflect their concerns, and it has been hard to find a solution that keeps both parties satisfied. The following technical project describes the process that introduced this problem which became the main subject of the STS project.

The technical project of this Thesis portfolio is developed in the course CS 3240: Advanced Software Development Techniques. It is about developing a web application that helps organize a student's school assignments, personal schedule, and let them interact with other students in the same course as them. This project uses Google API that helps collect one's personal calendar events and list them in this web application. During the process of searching for APIs, the access to personal information was surprisingly convenient. This realization led to the following STS project.

The STS project of this Thesis portfolio focuses on one instance where the public and the companies share their concern and navigate through this problem. Specifically, it is about the actions companies with voice recognition products can take to increase their security and better protect user's privacy. This project tends to analyze the actions taken by companies and the actions they could take as suggested by the public. The interview and questionnaire methodologies were used to prove the arguments and concerns that the users had. The STS

method used is the Actor Network Theory that uses the relationships between the actors to create a network to explain the social effects.

Since it is an ongoing subject, this research does not provide a definite solution for the problem, nor does it take either one party's side to discuss the subject. It will introduce the readers to the history of voice recognition, and the problem that came along with it throughout the years.

From the technical project, I have learned that we have easy access to people's personal information, and the issue it creates for the people. This introduced me to my STS project about privacy and security. However, from this STS project, I have learned that both parties have their concerns. It is not logical to say that one side is right or wrong. Companies want to provide better service and innovation; people want to have more privacy. They both have reasonable concerns that affect their life. Companies have taken actions, and they have promised improvements on privacy and security problems. Therefore, the solution that satisfies both parties is still in the making. Moreover, from both projects, I learned about the convenience of modern technology, and the power we have as computer scientists and engineers. Also, I learned the cost and responsibility that came along with that power.