

Thesis Project Portfolio

Remote Access Banking Fraud Defense

(Technical Report)

Autonomous Vehicles Impact on Accessibility to Transportation

(STS Research Paper)

An Undergraduate Thesis

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

University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Spring, 2022

Department of Computer Science

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Sociotechnical Synthesis

The technical project I worked on was an internship project involving a remote access banking fraud defense mechanism for IOS devices. This mechanism aims to protect consumers from fraudulent tech support calls in which screen-sharing and remote access are used. While working on this project I learned that designing a product that can accomplish the task and is secure is important, but it is almost equally important to trust who your user is and their intentions for using a system. Since banking apps contain sensitive financial and personal information, it is important only the person who is supposed to have access can see this information, or else many aspects of the client's life are put in jeopardy. This idea of having trust between the computer and human to provide a service sparked my interest in exploring this relationship further through autonomous vehicles.

The STS project focused on autonomous vehicles and their impact on accessibility to transportation and infrastructure design using Actor-Network-Theory. In my STS project, the idea of empowering people in a system that is dependent on others for transportation to have the freedom to safely travel easily is explored. Additionally, once the widespread adoption of autonomous vehicles occurs, public infrastructure can be redesigned from a driver-centric model to an autonomous system model, which can reduce the cost of public transportation systems and roadway maintenance. This restructuring can boast both cost savings and increased safety for passengers. The significant barriers to the widespread adoption are the initial cost of the autonomous systems, and getting the public to trust that these systems are safe. Considering how autonomous vehicles can impact society is important due to the rise in popularity of these systems in recent times. As these systems develop, they have the potential to become the dominating driving system.

Although in the technical project, the computer needed the trust of the human, in the STS project a significant noted roadblock in the widespread adoption of autonomous vehicles is the public trust in autonomous systems. This creates an interesting relationship between the two projects as both are considering computer-human trust, but in opposing ways. As autonomous systems evolve and become more sophisticated, they will likely begin to question human choices, while humans are wary of putting their life in the hands of a machine.