

Sociotechnical Thesis

The application of automation technologies into the healthcare industry has revolutionized medical systems and processes. It is no longer necessary for patients and their loved ones to rely upon their doctor(s) to memorize all symptoms and cues of every disease, nor do they have to wait for their doctor(s) to comb through literature in order to reach a proper diagnosis. A major example of a technology eliminating this massive inefficiency is Face2Gene, a mobile application that utilizes facial recognition to scan a person's face for characteristic facial cues and match them to a massive catalogue of data on genetic disorders. The freely-available application returns a list of most likely diagnoses and their probabilities within seconds, alleviating the workload for patients and their physicians. Patients can also have far more faith in the accuracy of their diagnoses with this application of machine learning, too, because of the massive amount of data supporting the finding(s).

Another major example of how automation technologies can maximize efficiency and reduces peoples' workload is automatic temperature screening devices. During the COVID-19 pandemic, many workers were tasked with spending their days standing at the entryway to an office/indoor space, scanning entrants' temperatures and asking them a few questions about recent exposures to the virus before admitting them. The Capstone project outlined in this prospectus proposes a design for a system that automatically senses someone approaching a doorway, scans their temperature from afar, then unlocks the door if the person's temperature is in a healthy range. Nobody is allowed to enter a space if they have a fever and thus could be contagious. The system also sends these temperatures to a Web dashboard that allows stakeholders to monitor the traffic into/out of an indoor space, through the number of people admitted and the number denied.

This STS research paper and Capstone project are therefore tied together by their ability to address inefficiencies in healthcare. Both of them involve automating processes that would otherwise waste the time of health care professionals/officers of public health. While the STS research paper provides a persuasive argument that the application Face2Gene has been molded by society to fit users' needs, the Capstone project involved the creation and testing of a physical prototype for the temperature-sensing door locking mechanism. As such, their deliverables are quite different. The Capstone project taught me how to design and create a tangible product beyond a written report. The STS research paper, on the other hand, taught me how to employ an STS framework to make a case for a particular viewpoint.