

Thesis Portfolio

**Reducing the spread of COVID-19 Through Elimination of Common Surfaces:
Socially Distanced Dispenser**
(Technical Report)

JobSeekr: A Centralized Web Application for Those in the JobSearch
(Technical Report)

The Internet of Things on Future Jobs
(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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Department of Computer Engineering and Computer Science

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Thesis Prospect

Sociotechnical Synthesis

In the STS thesis portion of the portfolio, the impact of the Internet of Things (IoT) on the Future jobs is analyzed through the lens of Winner's Theory. Literature related to the subject exists and is analyzed, but literature that examines IoT technologies through sociotechnical lenses are far and few between. Thus, this thesis aims to help fill that gap. Through Winner's Theory, the STS thesis portion will discuss how IoT technologies serve as forms of life that change how workers interact with each other, reconfigure social and hierarchical relationships, and redefine how workers do their jobs and what it means to have a job in general. Non-obvious politics behind IoT technologies and a lack of care for ethical implications can have drastic effects on the sociotechnical success of said technologies. This will be seen and further discussed in a few case studies in the Data Analysis and Discussion sections.

In the technical portion of the portfolio, an example of an IoT enabled device, the Socially Distanced Dispenser, is synthesized and analyzed. Even in this relatively simplistic IoT device, the tenets of Winner's Theory can be seen. The dispenser has the potential to slightly change how customers interact with workers and due to its requirement of a smartphone for operation, the dispenser also has the potential to effect/benefit certain social groups over others. That being said, the device has minimal impact in the grand scheme of society and thus the political implications are not as pronounced as in other technologies, but this technical project nonetheless connects to the STS analysis in that it shows that all IoT technologies, regardless of size or importance, have potential political and ethical consequences.

The second technical report, JobSeekr, is not related to the STS component of this portfolio.