Thesis Portfolio

Job Seekr
(Technical Report)

softwareEngineers — Socially Distanced Dispenser
(Technical Report)

Researching the Rise and Consequences of Food Delivery Services
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Sciences
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In Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science

In Fulfillment of the Requirements for the Degree
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SocioTechnical Synthesis

The problem that my computer engineering capstone addresses is the potential spread of germs from shared contact on food dispensers. The technology I created to solve this problem is the Socially Distanced Dispenser. This is a contactless food dispenser that could be placed in grocery stores or dining halls. The user would install a mobile application on their device. This app would allow the user to establish a Bluetooth connection with the dispenser. The user would then place their own bowl under the dispensing area. From there, the user could select how much food they wanted to dispense and tap the dispense button. The motor of the food dispenser would rotate proportional to how much food the user wanted. When finished, the user could disconnect and retrieve their food. While the capstone focuses on the technical side, the human and social dimensions of this technology are important to consider. One of the biggest drawbacks of this technology is not everyone has a smart phone. In this way, this technology inadvertently discriminates against those without smart phones, which is most often people of poorer economic backgrounds. For my technology's problem, Social Construction of Technology would be applicable. As the COVID-19 is a social problem, it has driven me and my team to create a contactless food dispenser. Originally, normal food dispensers fit well with the needs of the people in society, but as those needs changed, so did the functional requirements for this technology.

The problem my computer science capstone addresses is the decentralized nature of job applications. This is a problem for applicants of all kinds attempting to stay organized while putting themselves out there to a multitude of companies. This includes the need to keep track of past, current, and future applications, contact information, dates, interview practice, technical practice, and more. As it stands currently, a user must utilize different tools to complete these tasks. This capstone aims to fix this problem. With the proposed tool JobSeekr, a user would be able to do everything in one place. This web application scrapes and presents job applications based on a user search, as well as suggesting new applications based on user data. The user can keep track of these in one simple screen, as well as move and manage items freely. This site also provides practice, such as coding or behavioral questions, according to a user's search. Job applications on the site also come with suggested questions that have been reportedly used by interviewers of the application's company. Finally, the user can easily keep track of contact information and dates through this site for quick look ups and easy management. This includes a calendar view to give the user a clear idea of what they need to prioritize. For this problem, Technological Determinism could be used to analyze its effects. This site has the potential to change how users apply to new jobs, including streamlining and changing the application process.

For my STS research, I am using Actor Network Theory. In this research I hope to find the reasons behind the immense growth of food delivery services and how they have affected the food industry, as well as if they have positive or negative effects. Putting my technology and research together, I must consider that food delivery services could include grocery store or dining hall food pickups. In this case, delivery drivers would be required to be able to seamlessly interface with my technology, should the customer order something from it. If the driver can't easily work my technology, it would cause many problems. Additionally, it would be easy for a driver to skim some food off the top of the dispensed amount, as it would be hard for the customer to notice. While this is true for many other food deliveries (such as French fries), it is something to consider.