

Thesis Project Portfolio

iOS Development: Creating A Command Line Tool to Auto-Generate Boilerplate Code

(Technical Topic)

The Effect of TikTok Usage on Feelings of Loneliness in American Users

(STS Research Paper)

An Undergraduate Thesis

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

University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree

Bachelor of Science in Computer Science

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Spring, 2023

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Sociotechnical Synthesis

From films like *The Terminator* to artificial intelligence chatbots like ChatGPT, the idea of innovative technology replacing the roles of humans is not a foreign one. The hope of engineers and others working to develop new technologies is that such automations will improve the efficiency and overall quality of life of people. Both my technical work and STS research are connected to this concept of delegating some sort of software to a task otherwise done by a human being. My capstone project focuses on creating a command line tool to automatically generate boilerplate code for the API request file of a given plugin. This project is motivated by the desire to increase work efficiency by automating and creating a shortcut for a process that is constantly done. My STS research is related in that it examines research on the mental and social effects of using the social media application TikTok on users relative to other social platforms. This research topic was motivated by the idea that users of the social media app delegate TikTok as a replacement for more direct, in-person interactions. This again goes back to the idea of more advanced technology taking the roles of a human actor, which I investigate in my research.

For my Capstone project, I worked on a software product during a summer internship working with Capital One Financial Corporation, an American bank holding company. For my technical project, I worked with an iOS platform development team to create a command line tool that generated boilerplate code for the API request file of a given plugin. In other words, I developed a shortcut for developers of the company's iOS application to use to generate a basic template for code that is consistently used. To do so, I learned to use Apple's integrated development environment Xcode and programming language Swift, the version control software GitHub, and code generation framework SwiftGen. Additionally, I studied the iOS environment, worked through an agile process, and constantly communicated with my team to ensure the

success of the project. As a result of the internship, I helped to develop a minimum viable product that speeds up the request file creation process by roughly 85%. There are plans to further improve upon the base product, to allow more unique plugins to utilize the command line tool, as well as expand a similar concept for Android development.

My STS research focuses on the effects of TikTok usage on a user's mental health, with a more primary focus on effects on loneliness. Many social media platforms like Facebook have been thoroughly investigated for the possible negative consequences of their usage on one's well-being. With these past studies, there have been findings that social media usage does negatively affect users, but this has not stopped the overall prevalence of such platforms. If anything, social media is used by more people and for more serious topics such as political discussion, while research or suggestions against using social media have calmed down. Therefore, in my STS research paper, I look into what research has been done on the newest popular social media application TikTok to see if anyone has taken action. In my journey to find recent studies, I discovered that no research on TikTok has been done in the U.S. regarding its effect on mental health. Thus, I utilize pre-existing social media platforms and studies in my paper to push for the idea that further research is still necessary on TikTok usage's effect on American users' mental health and feelings of loneliness.

Because I worked on both my technical project and STS research simultaneously, I was able to make insights I otherwise would not have. Mainly, I was able to recognize that we as humans are constantly delegating roles to new innovations whenever possible. With my technical project, I saw this as a positive for the company I worked for and ultimately for its end users as well. The use of technology to automate an otherwise manual process allowed for engineers to focus on more important tasks such as developing new features to improve customer experience.

Alternatively, in researching TikTok, I was able to consider how the application as well as other social media platforms could be seen as replacements for in-person interactions. For instance, instead of spending more time with friends and family, one could remain entertained by scrolling on TikTok, which could be seen as a negative consequence. Overall, in doing both of the aforementioned projects concurrently, I was able to discover, further investigate, and bring to light this concept of delegation.