Thesis Project Portfolio

Democratizing Event Management: Developing a Mobile User Interface Tailored for College Students

(Technical Report)

The Rise of Infinite Scrolling in Software Design

(STS Research Paper)

An Undergraduate Thesis

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Sociotechnical Synthesis

User Interface (UI) and User Experience (UX) design in software development have become increasingly important over the few years as the number of applications has grown. UI design, focusing on the visual aspects and interactive elements of a digital interface, has evolved beyond mere aesthetics to become a pivotal factor in attracting and retaining users. Simultaneously, UX design, concerned with the overall experience and usability of a product, has become a key determinant of customer satisfaction. Together, these disciplines form the cornerstone of modern software development. My technical report is focused on my time as an intern at a software startup improving the UI and UX of their mobile application to align with standard UI patterns. My STS research is centered around the rise of infinite scrolling in software design, specifically looking at the usage of infinite scrolling when paired with curated content.

The technical portion of my project was focused on UI and UX improvements throughout the company's application. Using Flutter, my team and I developed a cross-platform mobile application tailored to the collegiate market, featuring a continuously changing QR code unique to each user to permit entry to an invitation-only event. The app enables customers to host events, invite other university social organizations, and monetize their events. The application's user interface underwent a strategic transformation with a specific emphasis on repositioning features and buttons to enhance user engagement. This undertaking yielded an increase in feature usage and an observable upswing in the conversion rate to paid customers. As the application continues to grow in both the number of users and features, redesigns of functionalities within the application are inevitable to meet the evolving customer needs.

In my STS research, looked at the rise of infinite scrolling and how it has fundamentally transformed how users interact with online content, providing a seamless and immersive

browsing experience across various digital platforms. Initially adopted by social media giants, it is now ubiquitous across the web. However, its convenience comes with significant implications for user behavior. Research suggests a correlation between infinite scrolling and addictive usage patterns, particularly evident on platforms like TikTok with highly personalized suggestion algorithms and engaging short-form videos, leading to concerns about addiction and its impact on mental health. I concluded that as addictive smartphone and social media usage becomes increasingly prevalent, addressing these challenges requires collaborative efforts from companies, policymakers, mental health professionals, and researchers to ensure digital platforms prioritize user well-being.

UI and UX design are powerful aspects of applications and can have widespread consequences beyond just aesthetics. In my technical report, I showed how redesigning components of an application to adhere to software design patterns can improve the experience for all users. As seen in my STS research, UX patterns such as infinite scrolling has impacts beyond just improving the functionality of pagination. UI and UX has widespread impacts that can be seen in any website or application used daily. For that reason, it is imperative that all parties involved understand the impacts of software design choices.