Thesis Project Portfolio

Developing Applications for Businesses using Low-Code Platform

(Technical Report)

The socio-political implications of government policies and legislation on the caste system's impact on higher education in Indianical Report

(STS Research Paper)

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Krish Kothari

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Department of Computer Science

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Executive Summary

Systematic efficiency is something that spans different domains. It can be utilized in the tech world and also in the social equality realm. In the current society, the need to streamline business processes is at an all-time high. Systematic efficiency is at the forefront of innovation, and technology that provides efficient solutions is the best way to streamline business processes. A problem that is faced in the tech world is the efficiency at which developers can develop applications. An average application can take multiple months to develop. Even if it's a simple application, you may need experienced software engineers or programmers. Thus, it's vital to learn and utilize technology that can streamline the development process and help businesses deploy applications rapidly. My technical project aimed at addressing how Low-Code platforms can streamline business processes unlike any other technology currently available. Systematic efficiency is also an issue in the socio-political realm. The Indian caste system is an ancient social hierarchy that limits educational access and opportunity for those in the lowest castes. The Indian caste system lacks efficiency and the lower caste students in higher education face issues that prevent them from reaching their goals. There are government policies and legislation that are aimed at preventing caste-based discrimination; however, these policies are not efficient. My STS research project is aimed at exploring the socio-political implications of government policies and legislation on the caste system's impact on higher education in India. While my technical project and STS project are unrelated, they have a similar focus on systematic efficiency. My technical paper focuses on this issue explicitly, whereas my STS paper takes an implicit path.

During my internship at Appian Corporation, I worked in a team to develop a web application for the University of Virginia's career center. I worked with Appian's low-code development platform. Our team was tasked with creating an application that would streamline

the career events hosted by the career center. We utilized the low-code platform to create a scalable and user-friendly application to improve the overall experience for students, employers, and staff. By leveraging Appian's low-code platform, we were able to rapidly develop the application. We utilized the easy-to-use visual interface and pre-built components to develop a functional prototype in just weeks. This process, if done using traditional coding methods, would have taken months. Our application included custom portals for each user group, real-time data integration, and a dynamic GUI layout that can be switched out for different events and venues. Throughout this internship and project, I realized the power of low-code platforms and how systematically efficient they can be. Its ability to accelerate application delivery is fantastic. Moreover, the platform ensures a streamlined development process due to the easy-to-use drag-and-drop features. Lastly, experienced programmers are not required to develop an application because beginners can learn this platform very quickly.

Even though the Indian caste system has been deemed illegal for well over 50 years, caste-based discrimination occurs to this day. My STS project examined the socio-political implications of government policies and legislation that address caste-based discrimination in higher education in Indian institutes. Mainly focusing on the lower-caste students, I analyzed the impact one's caste has on their experience in higher education. Getting admitted into higher education is an issue; however, avoiding deep-rooted stigma and caste discrimination becomes a bigger issue. I examined cases of individuals who faced discrimination and inequality at one of the most prestigious institutes, The Indian Institute of Technology(IIT). For example, Rohith Vemula, a Dalit PhD student who died by suicide after facing caste-based discrimination at the extreme level. Such stories show the need for an efficient system that comprehensively addresses these issues. My research highlights how approaches that are numbers-based like the

reservation system are not enough. There needs to be a better approach that addresses social and psychological issues faced by lower-caste students.

Reflecting on my two projects, I am proud of the work I have done. I was able to achieve everything that I set out to do. I am glad that I got to learn a new technology in my internship at Appian Corporation. I am amazed by the information I discovered about the Indian caste system and my STS research project. Both of my projects were fruitful. I was born and raised in India. This is one of the main reasons for my passion for my STS research project. Researching and finding out information about the struggles students face was heartbreaking. Lastly, researchers who want to pick up where I left off should interview low-caste students in higher education and examine their responses to find the root cause of caste-based discrimination and equality.