## **Thesis Project Portfolio**

## Data Privacy Under Attack: Proposal to Improve Data Privacy Legislation in the United States

(Technical Report)

Cross-Cultural Analysis on the United States and the United Kingdom: The Most Feasible

Methods to Improve Data Privacy Regulations in the United States

(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

**Kavin Bapat** 

Fall, 2023

Department of Computer Science

## **Table of Contents**

So	ciotec	hnical	Sy	ınthe	sis
$\mathcal{L}_{\mathcal{L}_{\mathcal{L}_{\mathcal{L}}}}$		mount	$\mathbf{\mathcal{O}}$	y II tII t	

Data Privacy Under Attack: Proposal to Improve Data Privacy Legislation in the United States

Cross-Cultural Analysis on the United States and the United Kingdom: The Most Feasible Methods to Improve Data Privacy Regulations in the United States

Prospectus

## **Sociotechnical Synthesis**

(Executive Summary)

Cross-Cultural Analysis on Data Privacy the United States and the United Kingdom

The rapid proliferation of social media is set to continue attracting users, leading to major corporations gaining access to extensive sensitive user information. This issue is particularly dangerous in the United States, which has significantly weaker data protection regulations than countries like the United Kingdom, resulting in increased data privacy breaches. My STS research explores how the US might draw on UK data privacy strategies to identify the most feasible initial steps towards enhancing its data privacy landscape. My technical project is intrinsically linked to this, but while the STS Research delves into potential legislative measures, the technical project aims to foster a paradigm shift in the cultural attitude of the US towards data privacy. The collection and utilization of user data by social media companies is a multifaceted issue, encompassing the fields of computer science, data science, and media studies. My academic background includes a major in computer science and a minor in data science. This, combined with my avid interest in social media and extensive coursework in media studies, equips me uniquely for an in-depth examination of these fields. An STS framework provides a comprehensive understanding of the ethics within sociotechnical systems, the interplay of various actors, and a holistic rather than fragmented view of the situation.

In my technical project, I undertook a comparative analysis of data privacy in the US and the UK, with a primary focus on the General Data Protection Regulation (GDPR) in the UK and

what the US can adopt from it. This study highlighted the deep-seated cultural foundations in the US that hinder the adoption of stringent data privacy regulations. Unlike the UK, where the collective good supersedes corporate rights, the US, both politicians and citizenry, generally have contrasting values. My conclusion underscores the need for value transformation in the US through educational initiatives before proposing legislation can be successful.

Similarly, my STS research involved an examination of data privacy in both nations, concentrating on the GDPR. I recognize that the UK's stricter regulations, underpinned by European values and historical contexts, differ from those in the US; however, my focus was more on the practicality of implementing specific legislation. The preliminary step to enhance data privacy in the US, I propose, is the standardization of regulations across states. The current disparity in data privacy laws across US states exposes many to unnecessary breaches; standardization would lay the groundwork for stricter future regulations.

Viewing the data privacy scenarios in both nations as complete sociotechnical systems, composed of organizational, technical, and cultural components, is crucial. My research benefited from understanding the various different actors, including, but not limited to, corporations, politicians, and citizens. The technical aspect is vital for identifying practical alternatives or solutions. The cultural dimension was paramount in comprehending the systems' configurations, significantly aiding in developing a realistic strategy for legislative success in a static environment like the US. A comprehensive grasp of the ethical dimensions is also imperative in truly understanding such systems. Conducting my research through an STS framework allowed me to comprehend the competing ethics in the data privacy dilemma and best offer solutions. It is necessary to analyze such sociotechnical systems through an STS lens to understand all aspects of a problem and best address it.