

Thesis Project Portfolio

Elective Coursework in Cyber Security and Data Analysis (Technical Report)

The TikTok Ban: A Technological Politics Analysis (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

Devasish Pant

Spring, 2024

Department of Engineering Science

Table of Contents

Sociotechnical Synthesis

Elective Coursework in Cyber Security and Data Analysis

The TikTok Ban: A Technological Politics Analysis

Prospectus

Sociotechnical Synthesis

My Technical Report and STS Research Paper, though focused on different subjects, are united by their examination of the relationship between technology, ethics, and society. In my Technical Report, I worked through concepts related to data privacy, security, and the implications of emerging technologies, albeit through coursework in “Intro to Cyber Security” and “Foundations of Data Analysis.” These electives introduced me to the complex world of digital data protection and the ethical dilemmas surrounding data use. My STS Research Paper, "The TikTok Ban: A Technological Politics and Deontological Ethics Analysis," further delved into the ethical, political, and security implications of technology by analyzing the debate over the TikTok ban. By examining the intersection of technological politics and deontological ethics, this paper reflects on the tension between national security, digital sovereignty, and the rights of users in a globalized digital world. Both projects have deepened my understanding of how technology interacts with broader societal values and power structures.

In my technical coursework, I focused on the fundamentals of cybersecurity and data analysis. In “Intro to Cyber Security,” I explored the vulnerabilities of modern digital systems and the ethical responsibilities of tech professionals in protecting user data. The course emphasized the importance of privacy and security protocols that safeguard individuals from external threats and unauthorized surveillance. In “Foundations of Data Analysis,” I learned how to analyze large datasets and extract meaningful insights while maintaining ethical standards for data handling, particularly ensuring transparency and fairness in data use. Although not a capstone project, these courses have provided me with the technical foundation to better understand the implications of digital governance, including the regulation of platforms like TikTok.

In my STS Research Paper, I used the framework of technological politics to analyze the controversy surrounding the proposed ban on TikTok in the United States. Through the lens of technological politics, I argued that the TikTok ban is not merely a response to data privacy concerns but is shaped by geopolitical tensions between the U.S. and China. The paper examined how the U.S. government's selective targeting of TikTok reflects broader struggles over digital sovereignty and influence. I also questioned the ethicality of the ban, evaluating whether it violated moral duties such as freedom of speech and user rights. My argument stressed that while national security concerns are valid, ethical decision-making should be grounded in consistent, universal principles that protect both individual freedoms and societal well-being.

Working on both my Technical Report and STS Research Paper simultaneously has been an enlightening experience. The technical skills I developed in cybersecurity and data analysis directly informed my understanding of the ethical issues in my STS paper. For instance, my technical knowledge of data security allowed me to critically assess the arguments around data privacy in the TikTok debate. At the same time, my STS research prompted me to reflect on the broader implications of digital governance, particularly the ethical dilemmas surrounding censorship and user autonomy. The two projects intersected in unexpected ways, with my STS analysis enhancing my awareness of the social, political, and ethical contexts of technology.