

**Thesis Portfolio**

**A Comparison of Censorship Evasion Techniques Under the Great Firewall of China**  
(Technical Report)

**A Cross-cultural Analysis of Internet Governance Between the U.S. and China**  
(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

George Noonan  
Spring, 2021

Department of Computer Science

## **Table of Contents**

Sociotechnical Synthesis

A Comparison of Censorship Evasion Techniques Under the Great Firewall of China

A Cross-Cultural Analysis of Internet Governance Between the U.S. and China

Thesis Prospect

## **Sociotechnical Synthesis:**

In the past several years, the rise in geopolitical tensions between the United States and China has contributed to a bifurcation of the internet. Although internet censorship through the Great Firewall has existed in China since 2006, recent tensions have pushed the split further into 5G telecommunications, data privacy rights, and more broadly into the ideological sphere. While the U.S. and Europe disagree on data privacy rights, they align ideologically in the belief of human rights and that they should extend to the internet. China, with a culture more centered on the belief of collectivism and serving the greater good of the people, has injected their ideology into a version of the internet where the government has absolute control over the information published. The construction of such an internet is often viewed by western media with a simplistic view of a repressive, authoritarian government suppressing its own people. However, if the deep sense of collectivism and lack of the sense of the individual is considered in the larger context of China's censorship apparatus, then a more realistic view is that the government's absolute control over the internet is a means to promote the collective self and Chinese cultural values. In other words, a version of the internet with Chinese characteristics.

While the Chinese government's version of the internet is better understood through the lens of Chinese cultural and societal values, the technical report does not consider these values in its research and contains bias towards authoritarian regimes that have systemic internet blocking. The report's cultural bias comes into play with its analysis of the efficacy of several internet censorship evasion strategies under the Great Firewall of China. Furthermore, the technical report explores evasion techniques and tools for accessing blocked content such as satellite television, proxy servers, end-to-end encryption and server-side evasion techniques.