

Thesis Project Portfolio

Data Analysis: Creating A Virtual Platform to Test the NGS Shipboard

(Technical Report)

Exploring the Shifting Dynamics of Customer-Technology Interaction: The Recent Growth of Online Shopping as a Sociotechnical Phenomenon

(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science

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In Fulfillment of the Requirements for the Degree

Bachelor of Science, School of Engineering

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Sociotechnical Synthesis

My technical report focuses on the design and implementation of a virtual platform to test the NGS Shipboard. During my internship, I was part of the navigation team with a primary focus on enhancing the navigation and combat systems of naval gunfire ships. Our primary goal was to establish an effective platform for testing the navigation and combat capabilities of various naval ships. Our team successfully designed and developed a virtual shipboard model that recorded data from different ships. Its application extended to our project, where we utilized virtual reality to model and test ship designs. The Navy's decision to adopt virtual reality in ship design stemmed from the potential timesaving benefits it offered and the emerging advancements in virtual reality and how it is evolving.

My STS research paper analyzes how businesses can enhance their understanding of how to create effective customer interactions that fulfill customer needs and expectations by examining the impact of technology and emerging trends. The widespread adoption of digital technologies has revolutionized customer-business interactions, leading to a shift in dynamics. Online experiences prioritize personalization, convenience, and speed and customer behavior and expectations are influenced by various factors, including cultural norms, social contexts, and individual preferences. This STS research paper highlights the rise of online shopping, saving customers time and making it easier to purchase products online over in-person interactions.

The synthetic connection between the technical report and the STS research paper is the emergence of virtual reality. Augmented reality is a form of virtual reality, and it is used widely in e-commerce sales and enhances shopping experiences by providing interactive experiences. With online shopping becoming a more sociotechnical phenomena, and the navy utilizing virtual reality to provide interactive experiences to test ships, we can analyze the advancements in technology and how technology is saving us time.