

## **Thesis Portfolio**

Explorer51 – Indoor Mapping, Discovery, and Navigation for an Autonomous Mobile Robot  
(Technical Report)

Comparative analysis of citizen journalism capabilities of WeChat and Twitter  
(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

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## **Sociotechnical Synthesis**

Robotics, autonomous systems, and artificial intelligence (AI) has the potential to change the nature of human guided exploration of indoor and outdoor spaces. Such autonomous mobile robots can be incorporated into a variety of applications, ranging from logistics and maintenance, to intelligence gathering, surveillance, and reconnaissance. The development of a 3D-printed mobile ground robot displaying these capabilities can allow "hacking" of the robot from the field, as components can be printed, modified, and installed as needed.

Likewise, social media provides wide accessibility to large audiences, allowing any individual to potentially share, re-frame, and discuss new information without going through traditional journalism sources. However, the capacity for any one platform for citizen journalism can also dependent on local laws and practices.