

## **Thesis Portfolio**

**The Case for Artificial Intelligence in Healthcare**  
(Technical Report)

**Data Mining in Healthcare: How Far is Too Far?**  
(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**

The technical aspect of this portfolio will cover my work building an informational website about artificial intelligence (AI) in healthcare. Upon completion, this website includes a comprehensive overview of how AI works including its benefits and drawbacks, as well as a survey of current technologies in the industry and their performance. Its main purpose is to promote further instruction for current medical professionals, and it lists some of the current resources available. The serves as a guide to help medical professionals make informed decisions about the technologies available to them, and encourage active participation in the decision-making process for the future of the technology in healthcare.

The STS section answers the question: Is HIPAA an effective tool for protecting health data? In this section I look specifically at companies like Google, Amazon, and Facebook and how the data that they collect has healthcare implications. The participant groups include medical professionals, technology companies, hospitals, and the patients themselves, and the research and discussion are done through the lens of surveillance capitalism.

While these two sections look at different aspects of the same field, the technical aspect has the potential to greatly affect the subject of data sharing. Many of the problems addressed are very recent issues that do not have concrete solutions, and medical professionals are some of the most influential participants in deciding how policies will change going forward. Therefore, it is important that they are as informed as possible on this subject.