

Improved Characterization of Patient Phenotypes for Advanced Heart Failure
(Technical Report)

On Medical Data Privacy
(STS Research Paper)

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science

by

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Preface

Information technology has changed many aspects of our economy, including the healthcare industry. How is the increasing use of software affecting relationships between healthcare consumers, providers and payers?

How can an algorithm designed for one point of care measurement be adapted to accept more? Classification of advanced heart failure is difficult. The team who had worked on the project previously, developed a machine learning algorithm using decision trees and multi valued decision diagrams to classify heart failure patients into 4 classes. My initial goal of modifying the algorithm morphed into data cleaning and attempting to compare heart failure classification scores. Despite a fair amount of data cleaning and score comparing, I didn't contribute as much as desired. Future researchers should refer to my initial goal.

How are privacy advocates, researchers, governments, data brokers and their customers competing to draw the line between legitimate uses of patient data and invasion of privacy? Each aforementioned party petitions entities (both governmental and non-governmental) in various ways to influence prospective legislation. Each also makes public statements to persuade the public to support their vision of data privacy. Lobbying, molding public perception and in certain cases proposing bills for a direct vote by citizens seem to be effective means of affecting future policy. An awareness of these tactics can help the public understand the major players in data privacy and participate if they choose.

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