Thesis Project Portfolio

Social Networks and Archival Context OpenRefine Plugin
(Technical Report)

How Can We Prepare for the Future of Artificial Intelligence?
(STS Research Paper)

An Undergraduate Thesis

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Bachelor of Science, School of Engineering

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Sociotechnical Synthesis
(Executive Summary)

Optimizing Data Manipulation Tools & Preparing for the Future of Artificial Intelligence

The links between my STS research and my technical project include technology, data, and the interaction between humans and information via a computer. However, my two projects approach these broad topics in vastly different ways. My STS research revolves around dispelling the misinformed fear of artificial intelligence in society as a result of portrayal in fictional media and how we as a society should prepare to optimize such a powerful and complex technology. My technical project on the other hand revolved around developing a plugin for an open source project that uploads, edits, and consolidates historical data and uploads it to a global archive.

My STS research hopes to answer two questions. First, should we fear artificial intelligence? Second, how should we prepare for artificial intelligence in society? I have researched what society might look like with the proliferation of artificial intelligence and how we can prepare to optimize the technology. The two parts of this investigation go hand-in-hand and are equally important. As artificial intelligence become more commonplace, our day-to-day lives will certainly change as the job market transforms and public policies adapt to accommodate the new technology. The changes can be positive or negative depending on how we as a society prepare for them. For this reason, I have investigated how we can prepare our society for such a transformation in a way that maximizes utility and minimizes societal risk. To investigate how emerging artificial intelligence might affect our society, I have researched how specific industries anticipate to change as a result of artificial intelligence and how artificial intelligence has shaped the industry in the past. Some fields I researched include ethics, education, the legal field, healthcare, and economics. Since artificial intelligence has already

permeated many of these fields, I've looking into how the market has adapted to the technology. As for the future of each field, expert opinions have been the most credible and accurate predictions. With these approaches for research, I can reasonably predict what society will be like with more applications of artificial intelligence. By looking at the ethical and political perspective, I can determine what preparations should be made in anticipation of artificial intelligence becoming more common.

As for the technical project, I worked alongside 7 other students in creating an extension for an open source project that manipulates large amounts of historical data and publishes it online. The Social Networks and Archival Context (SNAC) cooperative is a free online resource that helps users find historical information about persons, organizations, and entities individually as well as see the network that connects them to each other. Our team's task was to implement an extension that uses OpenRefine, a third-party data transformation and clean-up tool previously developed by Google to work for SNAC's database. This would give SNAC users the power to upload, edit, and consolidate both existing and new information through an intuitive web-based interface. The toughest challenges that we faced throughout our year of development included coordinating among an 8-person team, learning and working with new languages and frameworks, and jumping onboard and acclimating to an existing codebase.

Equipped with the knowledge of my STS research, I understand how vital preparation is with emerging technologies. By regulating and monitoring the development of artificial intelligence, a largely socially constructed technology, we will be in a position to optimize the benefits of such a powerful tool while minimizing risks and avoiding conflict. After spending a year developing an information manipulation tool that seeks to make people's lives easier in the pursuit of archiving data, it is clear to see that the tools at our disposal for working with big data

are continually becoming more and more powerful. With such powerful tools at the fingertips of many, the responsibility falls on us as a society to stay informed, make appropriate preparations, treat emerging technologies with respect and use it responsibly.