Sociotechnical Synthesis

Since the 1960's, data science has been growing in its ability to make accurate predictions and application across industries. By combining statistics and mathematical principles, data science allows those who leverage the technology to extract information and make predictions on large sets of data. With the rise of artificial intelligence, predictions based on data science have become more accurate and any individual with access to the internet can now use the technology.

During my summer internship at CapTech Consulting, I worked as a software developer on a team of 10 interns building a website for an airline company acting as a mock client. Using proper requirement elicitation practices, agile methodology, and front-end development skills, my team and I were able to successfully produce by a strict deadline a website that exceeded the needs and expectations of our client. Our elicitation requirement process began with the use of Figma, a software for user interface design. After discovering all requirements and client preferences, we implemented our design through a React front end with Material UI and a Node JS back end. Through this experience, we learned the importance of communication and daily stand-up meetings, as required in the practice of agile methodology, which made sure that each member of the team was working on incremental changes that could later be integrated with the work of the rest of the group. We successfully demonstrated our website to the client, which acknowledged that it exceeded expectations.

My STS research paper looks to explore how the use of data science has changed the role of general managers in the world of professional sports. This paper looks towards the "Moneyball" Oakland Athletics team who were pioneers in the use and belief in statistics to

make managing decisions. Following this success, professional teams across all major American sports raced to adopt advanced analytical practices which has lead to greater integration between technology and professional sports than ever before. A second team discussed in my paper is that Oklahoma City Thunder franchise with general manager Sam Presti. The Thunder have relied on predictive modeling for player acquisition and training and with this technology have built one of the most talented and best positioned teams in the National Basketball Association. These two cases are strong examples of the positive impact that integrating data science technology can have across industries.

Similar to the rise of the use of data analytics in professional sports, there has also been a rise in the implementation of this technology across the consulting and software engineering industries. Learning how to import, edit, and interpret large amounts of data allows companies to make greater informed decisions. Along with this, the use of Artificial Intelligence can greatly increase efficiency by automating the implementation of common processes and debugging errors. With the ability to make predictions often more accurate than humans studying the same information, the implementation of data science in the professional sports and consulting/software engineering industries will continue to disrupt the status quo while increasing efficiency and bettering results.