DS2002

Christopher Joseph

Prof. Jason Williamson

Reflection Paper Assignment: 25 Points

Data Science at The Warriors Paper

Disclaimer: I tested positive for COVID-19 during the First Week of Classes, which caused me to miss the discussion for this case study. All my writing and conclusions on this subject come from reading the case study alone, not from discussion.

Introduction

The Warriors Case Study was an interesting read about the Business Analytics and Strategy team for the Golden State Warriors working on a Machine Learning Data Science Project to accurately track and predict the best times to market ticket promotions for upcoming games to fans. This would, hopefully, boost the number of tickets sold if they were advertised at the right time. Hence, they called this project the "Ticket-Timing Model". Yocke and his team implemented the project with The Data Science Process, using the concepts of *Development* with Exploratory Data Analysis and Model Building, *Evaluation* with testing the model, and *Adoption* with considering how this project post-deployment will be used and what its impact will be. Interestingly enough, there was also a lot of focus, not on how the data will impact the model, but how the model will impact the data. Yocke's team put a lot of consideration into how the model itself could influence how people choose to buy their tickets, which could be a risk or a reward for

future marketing opportunities. This makes it all the more important to understand the impact that the Ticket-Timing Model could have once deployed.

Key Learnings

Nonetheless, the key takeaway I took from this Case Study was that there is a lot more to consider when practicing Data Science than one may originally think. Subjects such as data accuracy, completeness, and representativeness, as well as Model Impact, and adoption, should be considered when looking into data. For example, when Yocke was originally developing his model, he had to ask himself questions such as: “Is the data complete”, and “Is the data I used for this model representative of our entire team’s performance, and not just when our team was doing well?”. While it may be easy to collect data that is initially present, I thought it was very insightful to ask these types to ensure that before any type of data analysis occurs, that the data itself is accurate to the best of its ability. We also see tremendous concern with the model’s effect on the Sports industry after its deployment. Issues with adoption and the risk it poses were something I never thought about, and I thought were very interesting. For example, Yocke had to consider how to run the model that would have the lowest impact and bias on measuring customer ticket advertising, and after choosing a final model, he would have to find the most effective way to have this new, never-before-seen model be adopted into the traditional culture of the Golden State Warriors.

It is studies like this that show the potential for Data Science to be used in a plethora of fields. While most may be inclined to think data is only a job oriented toward

politics, government, or other bureaucratic/corporate positions. This Case Study shows that data science can be applied in even the most casual fields! Data is all around us, and its potential for improving lives and profit can be seen. Yocke's "Ticket-Timing" model is just one of many ways that data science can be used to improve fan engagement and business operations in the sports industry. This opens the door to other data science opportunities such as Sports Betting, Advertisements, Team Performance, and other sports applications! Using data collected from either sign-ups, programs, or tracked attendance, we can gather insight into the best opportunities for increasing engagement and profit!

Future Application

One of the ways I see myself using Data Science in my Future comes directly from the career I will be working in after graduation! I have been honored to accept a return offer at a Federal Reserve Bank where I work with Data Analysis and Databases! For The Federal Reserve System, it is imperative to keep track of many different types of data ranging from bank, business, and government information. Maintaining the efficiency and security of this data allows our nation to be confident in our financial system, tying into the health of the overall economy. Without it, our money retains no value, and our financial institutions collapse. Therefore, when reading into this case study, I feel like I learned a lot of valuable information to take with me while working in this field! Concepts such as going through The Data Science Process, ensuring that the data collected is complete, accurate, and representative of the population you're trying to

model for. It also showed me the importance of understanding how your data can be used in an organization and how its impact can have risks and rewards depending on its purpose. It's important to consider these aspects when drafting a final analysis or model of a dataset. Personally, I will be taking this new knowledge with me while working at The Federal Reserve to see how we can automate our bank's practices and track spending/inflation for the future of the economy!

Personal Reflection

Overall, when looking at the case study as a whole, there are a lot of new things I learned and will take with me on my professional path forward. This case study did well to expand my perspective on the many applications and potential that Data Science has as the world progresses into a more digital/information-based era! For one, I was shocked to see how effective a machine learning model can be, even when used in a setting where I didn't originally predict a lot of data science being applicable. I thought it was very clever that Yocke used data on ticket sales to make an educated algorithm that would attempt to predict the best time to advertise tickets to maximize profits for the Warriors. Niche concepts like these exist throughout our lives, in something as casual as Sports, to as high-stakes as a bank. I think this study did well to help me understand more about that ideal. My only challenge in reading this case study would've been to see more in detail how Yocke and his team developed the model and have more of the article talk about what happened after the model was deployed. Did they find ultimate success, or were the results inconclusive? I feel the article did not explain it as much as it could have,

ultimately leaving me perplexed at whether they accomplished their goal or not, and what they learned from it. Nonetheless, I took a lot from this reading.

Conclusion

In conclusion, the Warriors Case Study has shown me many of the applications of data science, particularly in areas where it may not be immediately obvious, like the Sports Industry! The Ticket-Timing Model showed the multi-layered challenges and considerations involved in data-driven decision-making, from ensuring data accuracy and completeness to assessing the potential impacts of a model on business practices and tradition. As a student, this case study has expanded my perspective on the versatility and power of data science. It has shown me how to follow the Data Science Process and the *Exploratory Data Analysis* model. It has also shown me how to truly question my data before modeling an approach. This realization will guide me in my future work as I step into my role at the Federal Reserve, where the principles of data integrity, process, and impact will be critical. The insights I've gained from this case study will guide me in ensuring that the data models I work on are not only accurate and representative but also mindful of the broader implications they may have on our financial institutions and the economy.