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# Project Constraints Essay

## Legal

Given that this project works with professional athletes' performance data to predict who will win matches and games, it opens up possible legal implications due to gambling and IP laws. Gambling laws affect this project because the predicted outcomes may be used by fans and sports betting enthusiasts to place their wagers, which would require us to provide disclaimers that clearly state that the projections are for informational and entertainment purposes only, and that they are not guaranteed to be accurate, so they should not be seen as gambling advice. This project would also be impacted by IP laws because of the player performance data being owned by various leagues, teams, and/or data providers, using that data without a license via web scraping, could violate copyright laws, database rights, or terms of service. Since we are using public datasets for the statistics, licensing shouldn't be required.

## Social

There are social implications with this project that can both benefit society, as well as hold potential drawbacks. The app could be used for public service because it could be used by local communities and non-profit sports organizations to improve player development at no cost compared to commercial analytics software. This software could also encourage objective evaluation of performance, reducing bias based on reputation or subjective opinion, because the projections would be backed by statistics to prove it. The potential drawbacks that could result from using this software are overreliance on its algorithms, is if coaches and/or fans treat the projections as objective truth, that could lead to unfair bias on players, and could lead to unhealthy gambling habits for fantasy leagues. It is important to mitigate this by including disclaimers that the model is not a guarantee, but rather a data-backed prediction to open users' minds to how players and teams' performance could determine the outcome of games between them.

## Ethical

There are ethical and moral problems when it comes to marketing or sharing this project publicly. The world of sports is unpredictable and a model like this that advertises the ability to make predictions can mislead people especially when combined with the growing commonality of sports betting. We plan on making sure to not market our predictions on their accuracy and having alerts to make sure people know that this is not legitimate financial advice and that nothing we post is a “lock” or set in stone as something that will happen. We also had considered the idea of showing a history of our model and how its predictions showed up in real time which should work doubly well for us by showing our success rate but also showing that the predictions aren’t and can’t always be correct. Another thought we had was to separate the site into a “sports insights” page which just shows some notable players to watch or interesting streaks and predictions which we have on them, a “fantasy” page for start/sit opportunities in fantasy sports, and a “sports betting” section which will compare our model’s predictions with lines from popular betting sites and our favorite picks. This would allow us to section off the areas which could be harmful and age restrict them and have warnings pop up when navigating to it.

## Professional

We both plan on having this project make a big impact on our professional developments. Neither of us have any professional experience in data science or machine learning and only one of us has ever even studied and created a project using machine learning which was very basic. We both see this as a big learning opportunity to understand the process all the way through, from data importation, to cleaning, to storage, through to training and testing, and finally improving our UI design and data presentation skills. This should allow us to sharpen our skills analytically and also improve our coding skills as neither of us has ever worked on a project this large without daily oversight. Another way this is helpful is the ability to work on our source control and peer programming skills specifically using git as we both worked at a company that used another form of source control. Finally, this will be something which we can both have on our resume as proof of our learning which we can talk about and hopefully use to get attention and eventually land jobs in our chosen fields.