Link to my proposal: Lyev second Capstone Proposal

List:

1. UFA website
2. UFA youtube
3. Ultianalytics
4. Ryan
5. Mr. Lehmann
6. Lehmann's sources
7. tidyverse.org
8. https://karinehsu.github.io/cs109-final-project/website/
9. https://hirosme.shinyapps.io/UltiMaps/
10. https://www.bruinsportsanalytics.com/post/ultimate_per

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1. **Website/Database**

"Watchufa." WatchUFA, watchufa.com/. Accessed 17 Jan. 2025.

This is the official website of the Ultimate Frisbee Association (UFA), and while it has access to many storylines and news from the league, I will mostly be using its statistics section. Some useful parts of the UFA stats section include player statistics pages, as well as big, customizable tables of team and player data. From my knowledge, this seems like rather basic information, but it will still be helpful for me as someone new to the sport, as well as to create a baseline for what I work with. Lastly, my favorite section of this website are the individual game box scores (all of which I can find in a game finder), that show not only statistics from games, but charts showing plays and an entire play-by-play.

2. **Youtube Account**

"Ufa Ultimate Frisbee Association." YouTube, YouTube, www.youtube.com/@watchUFAtv. Accessed 17 Jan. 2025.

This is the Youtube account for the same Ultimate Frisbee Association. I mostly hope to use the highlight videos of individual games here to build my understanding of frisbee as a sport, as well as corroborate some of the data I might look at in the play-by-play sections of the UFA box scores. As I watch these game highlights, as well as some of the full games I can get my hands on for free, I hope to especially pay attention to what the announcers are saying and what statistics they are referencing. Additionally, there is the occasional video about the rules and strategy of the game, which will be especially helpful for me to understand frisbee.

3. **Website/Database**

"UltiAnalytics: Analyze Your Team." UltiAnalytics, www.ultianalytics.com/index.html. Accessed 17 Jan. 2025.

Shown to me by Mr. Lehmann, UltiAnalytics is a website that logs seemingly more in depth information from frisbee teams and games, also going beyond just the professional level (this even has SLA's team on it!). At least to me right now, it seems like many of these numbers go beyond what the UFA website shows, and also contains some interesting strategic planning tools. Another important section of UltiAnalytics is the "Calculations" section, which, as a person that has never seen these metrics before beginning this project, are useful to show the math behind the data. However, for the sake of me trying to use data from professional leagues, it is useful to note that it only shows data from the UFA from 2019 and earlier, a now pretty outdated figure.

4. **Mentor Meeting**

Brill, Ryan S, and Lyev Pitram. “Mentor Meetings.”

This source represents all of the meetings I have with my mentor, Ryan, a UPenn PhD student in Applied Math and Computational Science. The expertise that I get from him mostly comes in two ways: the coding knowledge and the methods for planning a project/knowing which questions to ask. First, Ryan’s knowledge of R programming (which I hope to use as the main language for this project) can help with debugging and learning functions that I may otherwise not know. Second, Ryan can help brainstorm what exactly I want the final product to be based on the question(s) I am asking, as well as a more specific timeline.

5. **Discussions with Mr. Lehmann**

Lehmann, Chris, and Lyev Pitram.

Before Winter break, knowing his knowledge of ultimate frisbee, I introduced my capstone to Mr. Lehmann and asked him for guidance in my project. I was specifically looking for what people in frisbee would find useful to analyze through the lens of statistics. In that meeting, Mr. Lehmann introduced me to UltiAnalytics, and really showed me the span of what sort of frisbee analytics have already been established. Most importantly, this conversation was able to open a lot of doors for me to communicate with other experienced people in the sport of frisbee. Mr. Lehmann offered me to send him a list of questions that I would have for a general frisbee audience, which he could then forward to his network.

6. **Mr. Lehmann’s frisbee related sources/network**

No citation yet

I haven’t sent my list of questions for Mr. Lehmann and other frisbee coaches yet, and am still preparing it, trying to get a sense of what I should know in order to create a successful frisbee analytics project. My mentor Ryan, who himself also has limited knowledge about frisbee, suggested that I look into asking questions about specific areas: player evaluation, team evaluation, strategy comparison, positional value, and more. While these general areas are applicable to many sports, finding what exactly this means in frisbee, and then asking specific questions for how these areas can be advanced, would be my next step in communicating with Mr. Lehmann’s network.

7. **Coding Guide**

Tidyverse, tidyverse.org/. Accessed 17 Jan. 2025.

Tidyverse is the primary package of data science functions in R programming. At the beginning of every code, I was taught to always write “library(tidyverse)” to activate all of the functions included, which would be critical to a project of this scale. Tidyverse.org is a base website for literally every function that is included in the language, from graphing to data manipulation, and I hope to use it as my guide to coding, especially if my mentor Ryan is unavailable, as well as when I just have a minor issue that isn’t worth scheduling an entire meeting with him. Between the explanations of language grammar and cheat sheets of functions, I’m really excited to have this resource.

8. Example Project

Martinez, Jackie, et al. “Analyzing Ultimate: Quantifying and Predicting Ultimate Frisbee.” The Ultimate Frisbee Analysis, karinehsu.github.io/cs109-final-project/website/. Accessed 17 Jan. 2025.

This project, seemingly a college project as part of a computer science course (I can’t figure out the college), can serve as a model for what I want my final deliverable to look like. First, it asks a few questions about frisbee and analyzes them using data from the UFA, exactly what I want to do. Reading through this project can help me get a sense of what work has already been done, and can potentially spark my mind into asking questions about a project of my own. My favorite part of this webpage is how many graphs are displayed, with many types of graphs and data represented. Trying to replicate this is definitely a consideration once I get closer to the presentation phase of my capstone.

9. Interactive Graph Example

Schmidt, Hiro. “UltiMaps.” Ultimaps, hirosme.shinyapps.io/UltiMaps/. Accessed 17 Jan. 2025.

This source is a set of maps of various metrics (Expected Point Outcome, Completion Rate, and Score Probability Added) spread across a map of a frisbee field. The concept and interactiveness is interesting to me, and like with the previous source, this can serve as inspiration for how I want to present data once I reach that phase in my project. However, this also serves a great purpose of showing me Frisbee strategy in a numerical way: I can see how scoring and passing is affected by what parts of the field the disc is thrown from/to. This is a great tool for me to understand a bit about how the field works before watching any footage, then being able to corroborate it by watching real games.

10. Second Example Project

Sports Analytics, Bruin. “Player Efficiency Rating in the AUDL: Developing an Impact Metric for Ultimate Frisbee.” BSA, BSA, 12 Dec. 2021, www.bruinsportsanalytics.com/post/ultimate_per.

This source is another, more extensive project related to frisbee analytics, for which I can draw inspiration from in which questions I want to ask and how I want to present my final findings. Additionally, it is helpful to note that this is part of a greater sports analytics club at UCLA, and it is interesting to see how frisbee is expressed in the context of analytics for many other (more popularly watched sports), like football or baseball. A specific aspect that is helpful for me as a learner is how well organized the project is, also making sure to explain even some important aspects of frisbee before diving into the big analysis (which is something I might want to consider in my future presentation).