

Fantasy Football Draft Assistant
The General Managers - Group 7

DSCI 591: Data Science Capstone I
Status Report

Date:

03/23/2025

Team Members:

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Capstone I Overview:

In Part 1 of our capstone, we developed the foundation for the Fantasy Football Draft Assistant, a tool designed to help fantasy football managers make informed draft decisions. We acquired and preprocessed 2022-2024 NFL player statistics from sources like Pro Football Reference, FantasyPros, and NFL.com, integrating passing, rushing, receiving, defensive, and special teams data. We handled data cleaning, name standardization, and feature engineering, creating key metrics like Average ADP, Positional ADP, and Fantasy Points while addressing missing values and outliers.

Our exploratory data analysis identified positional trends, draft patterns, and performance distributions, informing our approach to feature selection and multicollinearity reduction, ultimately reducing the dataset from 172 to 70 features. This structured preprocessing pipeline sets the stage for machine learning modeling in Part 2, where we will use MLP Regression, XGBoost, and Linear Regression to predict fantasy performance and optimize player recommendations.

Next, we will implement the recommender system, refine model accuracy, and develop a dashboard UI to make our insights accessible. This work ensures our system is adaptable to different league formats and draft strategies while providing data-driven recommendations to fantasy football managers.

GitHub Repository

<https://github.com/caleb10miller/FantasyFootballHelper>

Three branches:

- **main** - contains deliverables, README.md, requirements.txt, & licensing file
- **web-scraping** - contains all data acquisition and preprocessing scripts
- **EDA** - contains all exploratory data analysis related notebooks

Launch Report (Delivered 01/13/25):

<https://docs.google.com/document/d/1CQxeFVEh1mQrDLrERtKnSajse7rqxQco/edit?usp=sharing&oid=111509805476584987479&rtpof=true&sd=true>

Data Acquisition & Preprocessing Report (Delivered 02/10/25):

<https://docs.google.com/document/d/1TgcuJZKM9aFWG5aI0km6b21ZlpxOtxQm/edit?usp=sharing&oid=111509805476584987479&rtpof=true&sd=true>

Pitch Presentation (Delivered 02/15/25):

https://drive.google.com/file/d/1E_uNNZJjbtu5UlaMU2E7Af9b6-4ReAhv/view?usp=sharing

Exploratory Data Analysis Report (Delivered 03/09/25):

<https://docs.google.com/document/d/1wfEeCtZBkcaGsFDg3FPfBU1x9lZeYKLW/edit?usp=sharing&oid=111509805476584987479&rtpof=true&sd=true>

Status Presentation (Delivered 03/21/25):

<https://drive.google.com/file/d/1sydyFS7jj5hmBk8uRm4yC96Nk3kmWbUi/view?usp=sharing>