



## PROJECT MOTIVATION

This project enhances the ticket mapping system used by Purdue Athletics Ticketing who use the app to manage pricing for Football and Basketball games.

Our goal is to develop an interactive, data-driven platform that supports smarter ticket pricing by:

- Improving seating and pricing visualization with an interactive map of the stadium
- Filtering the data through dropdown selections
- Enabling data-informed pricing decisions from statistics created with the filtered data
- Identifying unrealized revenue per game

This is because the current system only allows the user to view if seats are sold or not. Our redesigned platform consolidates multiple new apps into one interface, adds real-time updates, export features, and allows direct data file submissions, boosting efficiency and insight for the Purdue ticketing team.

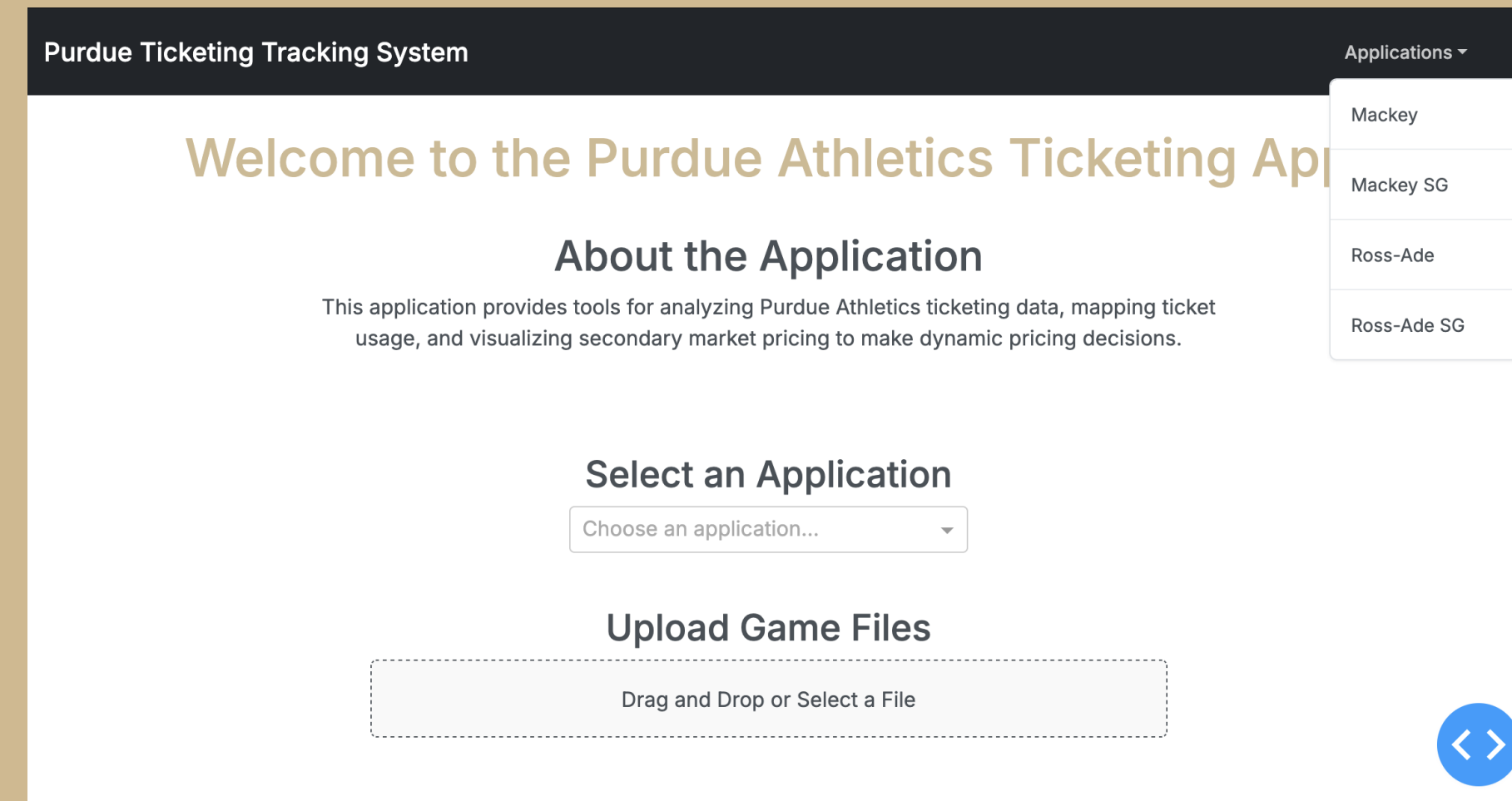
## RESEARCH METHODOLOGY

Our user Brian Fordyce, Assistant Athletics Director, had a few issues with our previous applications. One of them was run time and the inability to switch from looking at one game to another game.

Another problem we had was with adding new data. Every time the user wanted to change which game data they were looking at they would have to manually change the filepath in the code to the game file they wanted. To fix these flaws, our team decided to combine our four applications into one where the user could easily switch between games and datasets using dropdowns. Using Python, our application now includes a home screen and dropdown file so that Brian can easily upload files to the app. To improve accessibility, we moved our application to a Github-based system to decrease the wait time that came with starting the app also allowing the app to be hosted locally on the user's computer.

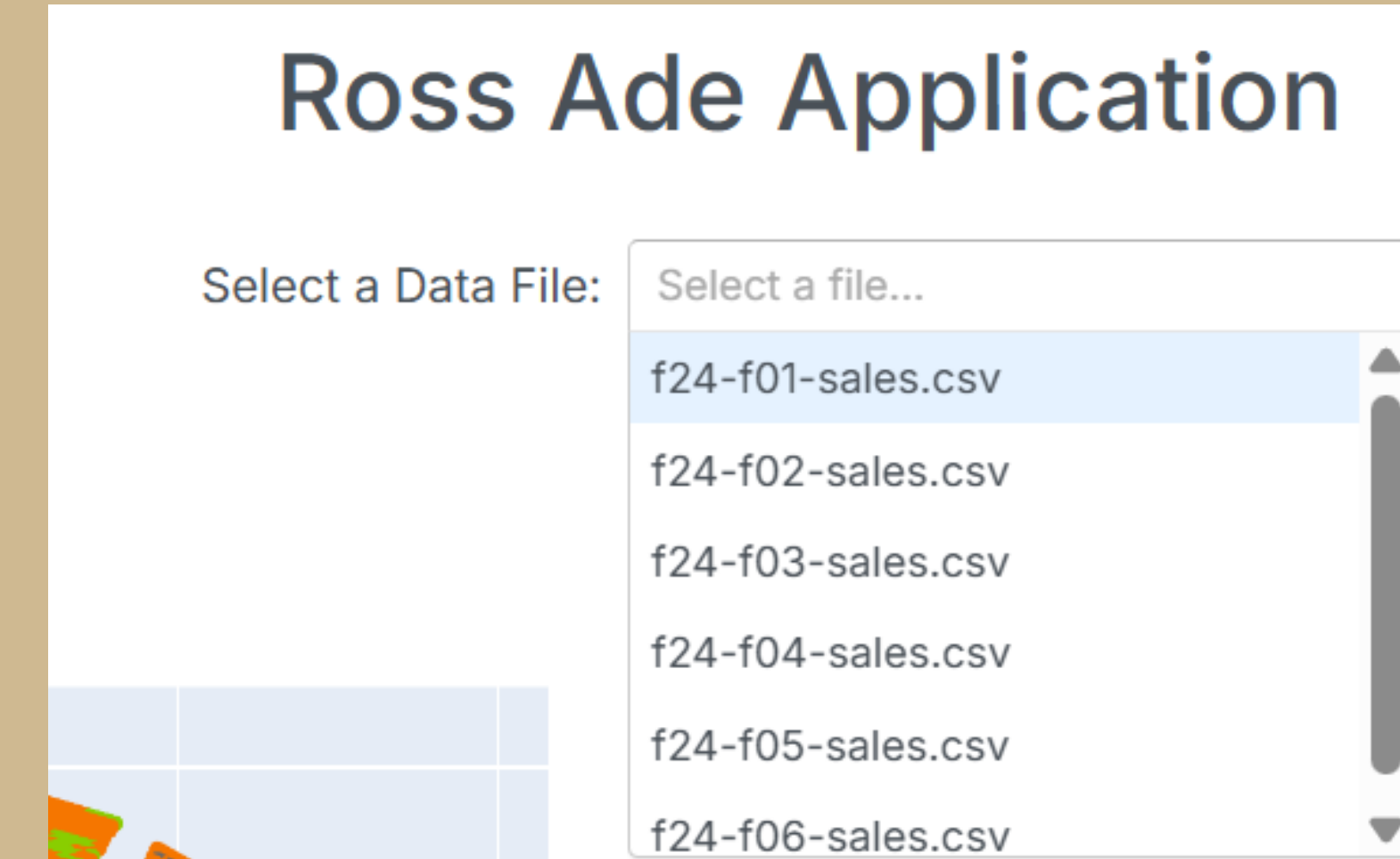


Figure 1: Landing Page



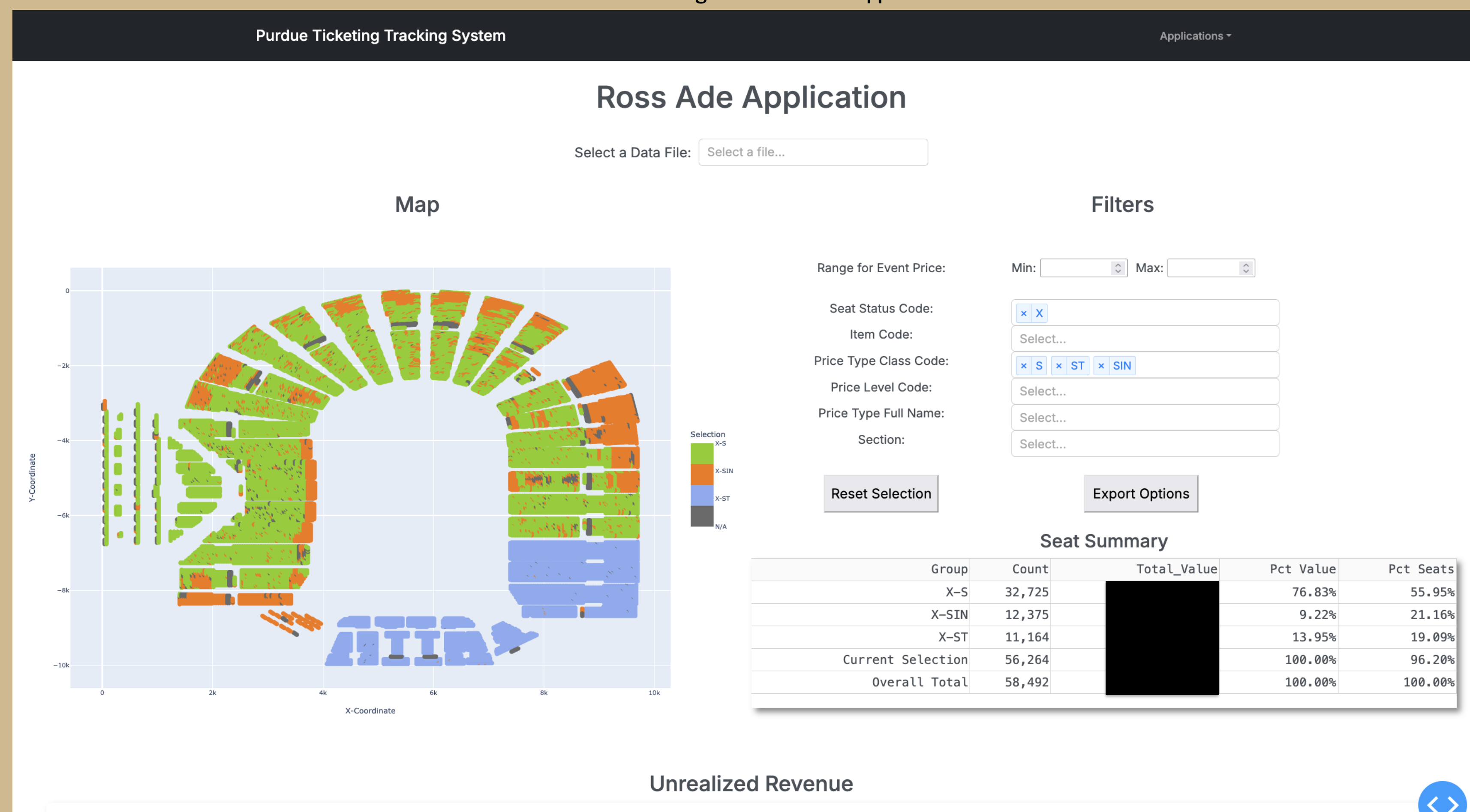
The landing page is the main interface for the application, allowing users to navigate and manage data by enabling the user to upload it into the application's data folder through a file upload feature where users can submit game data, which is automatically stored and processed based on the selected application.

Figure 2: Data File Dropdown



The dropdown menu lets users select from available sales data files. Selecting a file updates the seat map, statistics, and revenue tables to reflect the chosen game. It switches the displayed game and loads sales data such as seat status and pricing from the selected file.

Figure 3: Ross-Ade App



The app displays an interactive seat map of Mackey Arena, showing game-specific sales data based on selected filters like seat status and price level.

While the Unrealized Revenue Table isn't shown due to privacy concerns, it estimates potential revenue loss by identifying unsold seats and calculating their value based on price tiers.

## CONCLUSION

### Application Improvements:

- Integrated multiple applications into one.
- Implemented dropdown-based file selection to update data.
- Developed table to estimate revenue loss from unsold seats.
- Enabled users to select and export specific tables in a combined Excel file.
- Created landing page for file uploads

The integration of multiple applications has increased the overall efficiency. The dropdown-based menu has made the app more user-friendly allowing quick and easy filtering of the data. The unrealized revenue table has broadened the statistical scope and allows for easier decisions on ticket prices. The new ability to export and import files now allows for the ability to share data created by the app to others.

## FUTURE PLANS

We plan to develop a new application for Holloway Gymnasium to expand the ticketing system. This will allow us to expand our analysis of different sports and games. Additionally, we want to integrate a way for the map to dynamically update when the seating charts in the stadium change. This will improve the upkeep and maintenance of our app so that our user can be more self-sufficient when using the app.

## Acknowledgements

Special thanks to Brian Fordyce for his invaluable mentorship and guidance throughout the project. Appreciation is also extended to The Data Mine staff for their ongoing technical and logistical support. This project aims to enhance data-driven decision-making within the Purdue Athletics Ticketing Department.