OPTIMIZING FANTASY FOOTBALL DECISIONS
Performance, Injury Risk, & Hidden Gems

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OBJECTIVE

Develop a **data-driven platform** for fantasy football enthusiasts that delivers **actionable insights**, enabling **informed lineup decisions**, injury risk management, and performance predictions

MOTIVATION

- Fantasy football players often face challenges:
  - Predicting player performance in upcoming weeks
  - Managing the risks and impacts of player injuries
  - Identifying overlooked players with high breakout potential
- The platform addresses these challenges by leveraging advanced data science techniques and providing an intuitive interface for decision-making

DATA & METHODS

Sourcing

Wrangling
- Developed position-specific metrics for efficiency
- Emphasized recent performance trends
- Integrated defensive statistics for each position to contextualize matchups
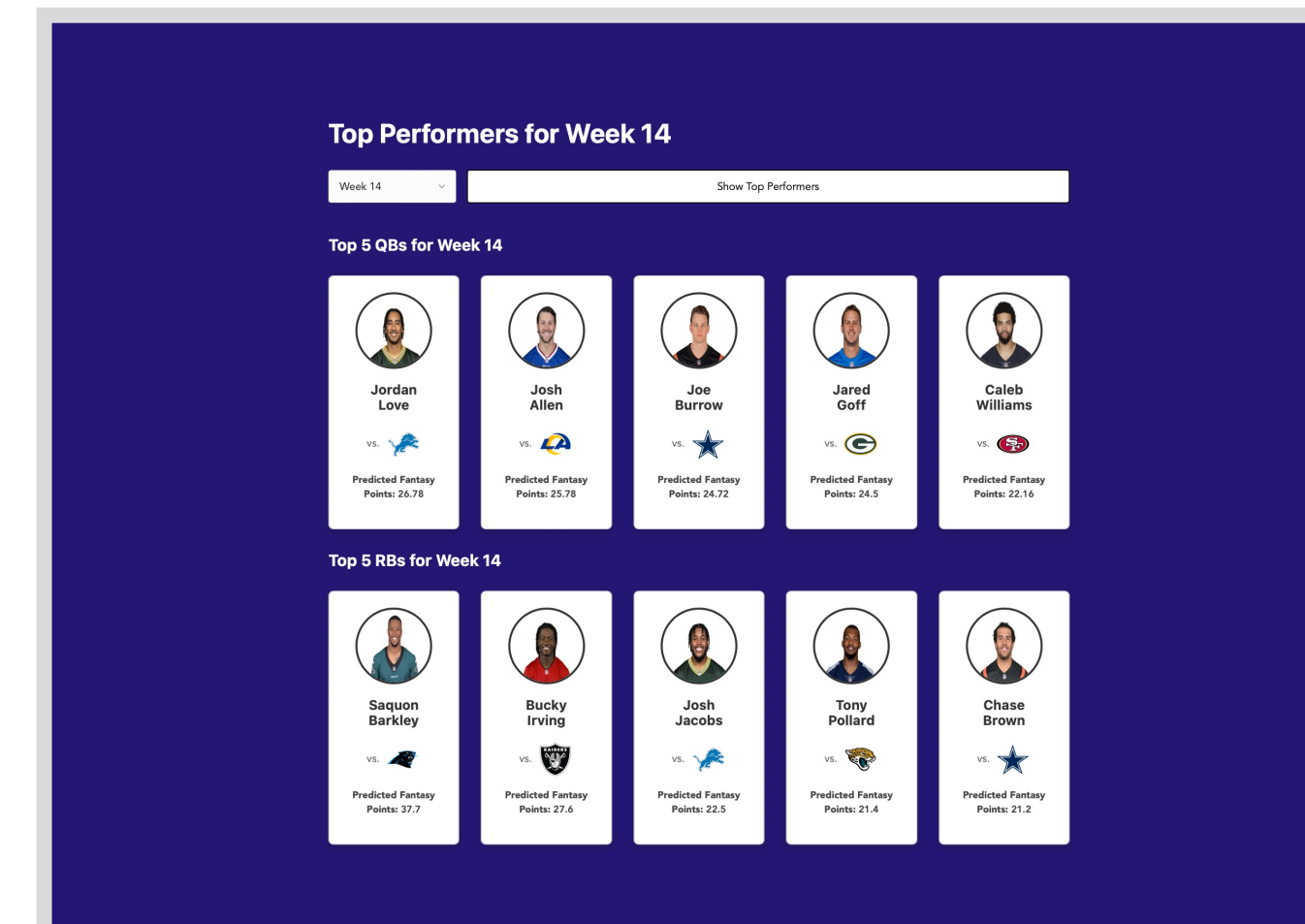
Modeling
- Regression model trained to predict football metrics
- Key features include player efficiency, recent player form, & defensive matchup for each position
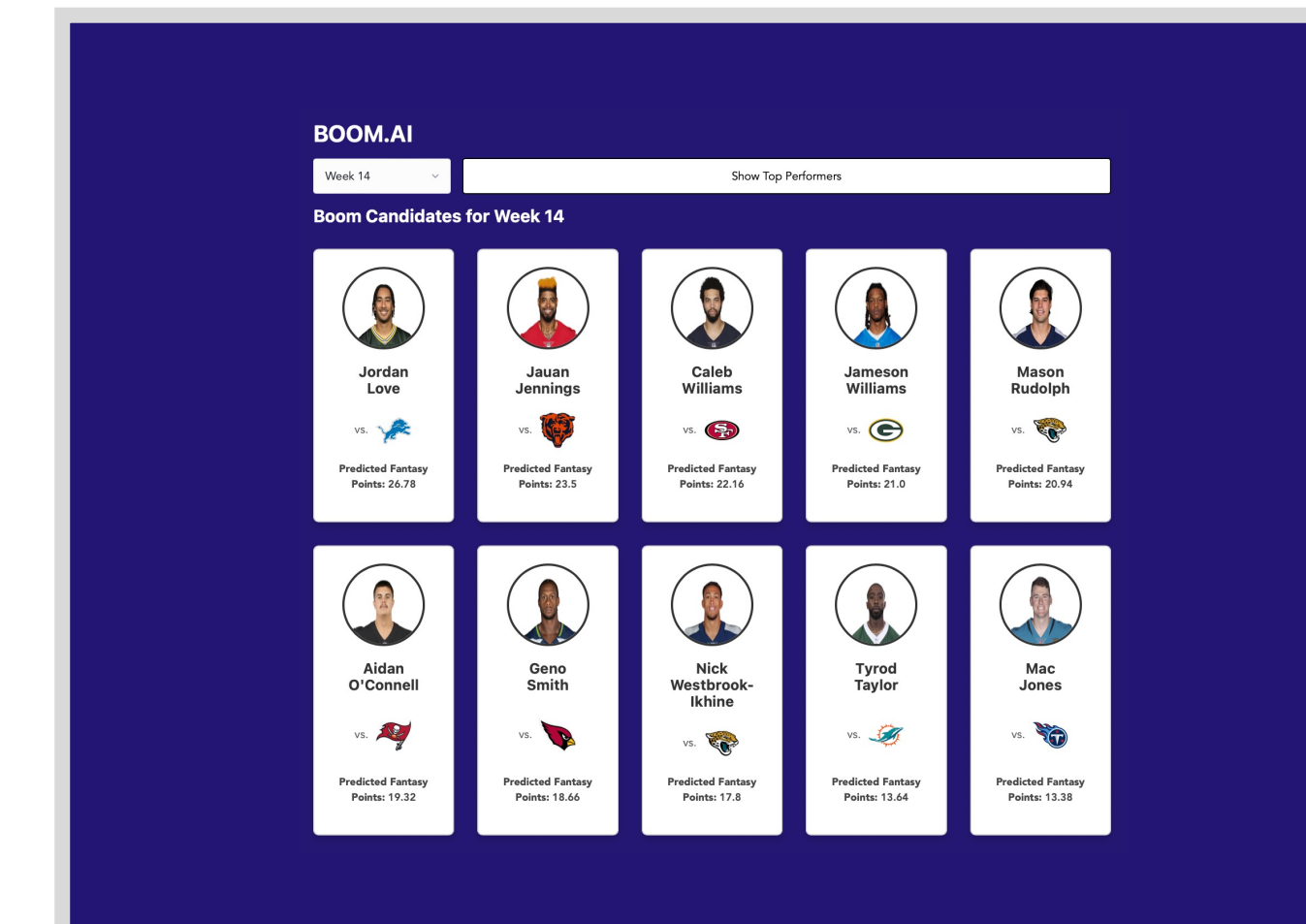- Predictions made using most recent week's roster

Visualization

FLEX PLAY FEATURES
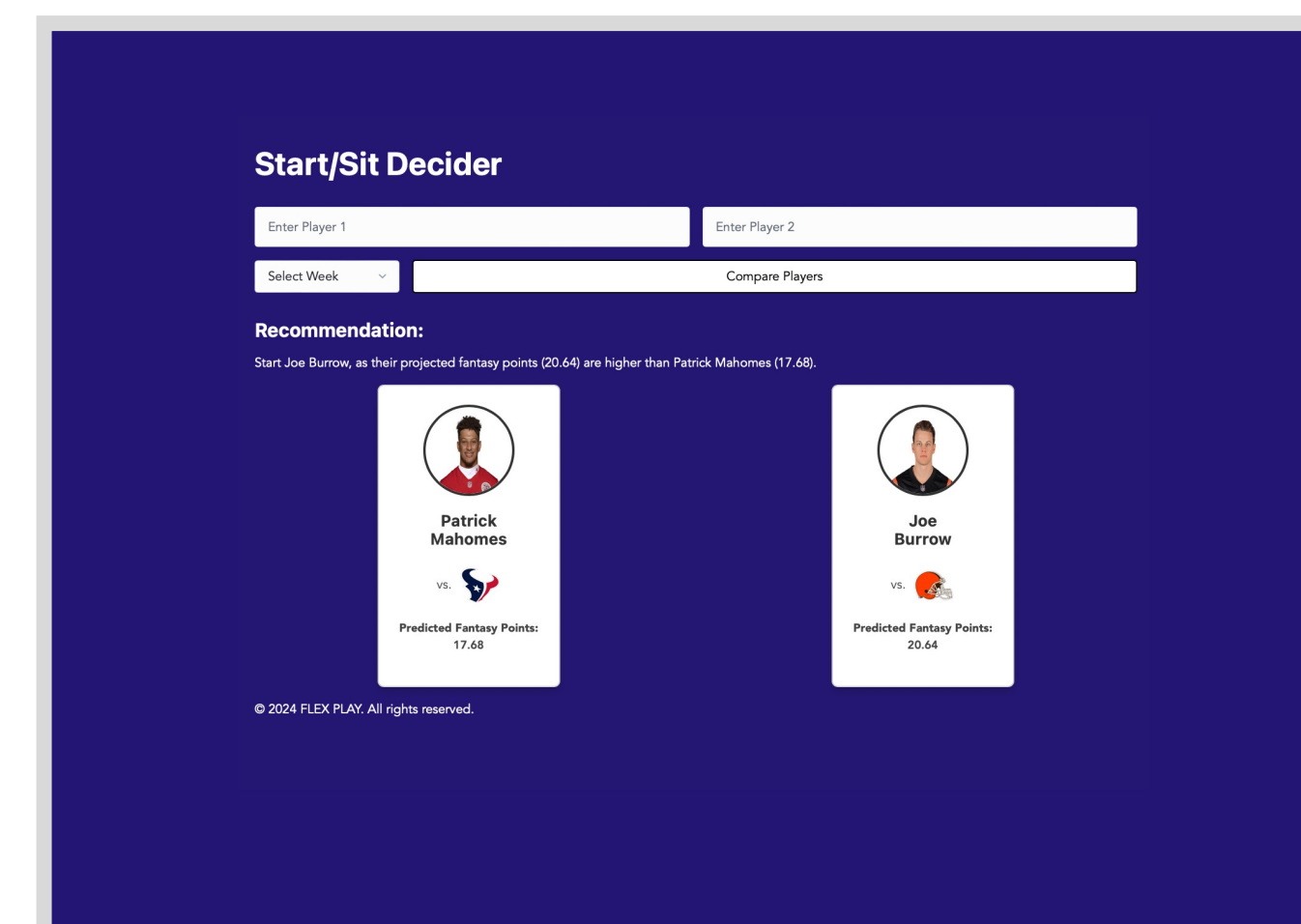
TOP PERFORMERS

Provides weekly predictions for QBs, WRs, TEs, and RBs, identifying the top 5 scorers at each position
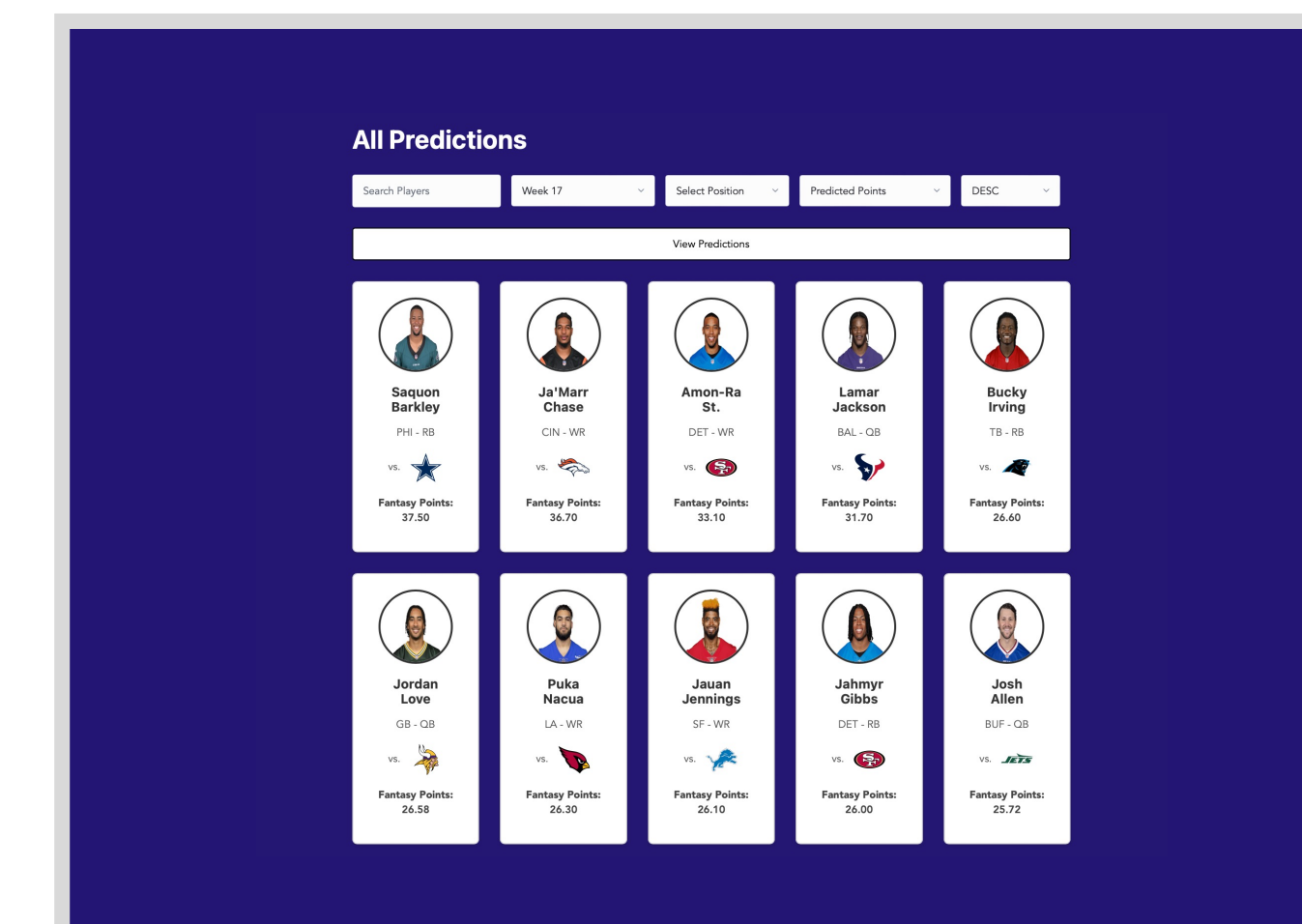
BOOM.AI

Identifies overlooked players (e.g., waiver wire additions) poised for potential breakout performances
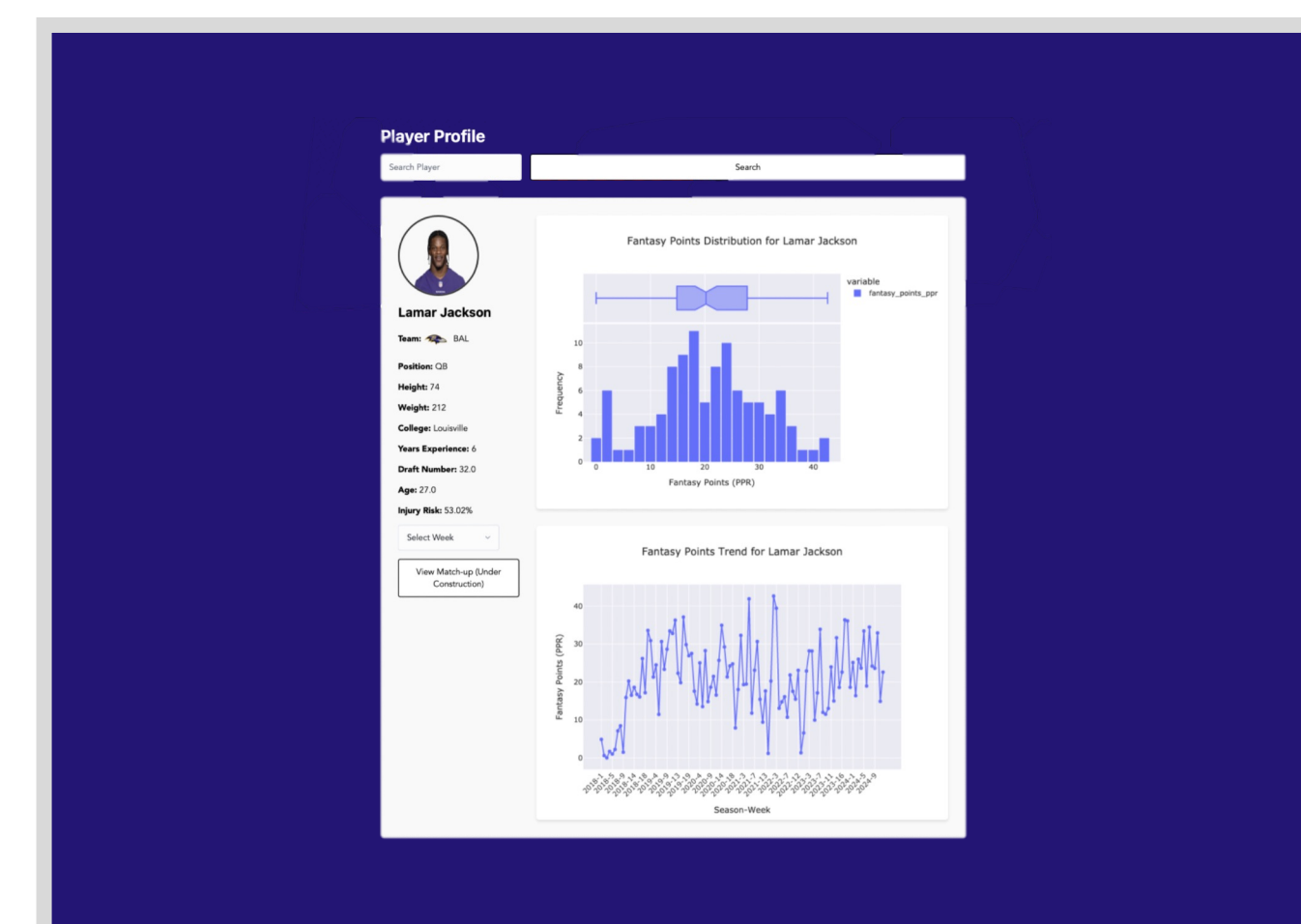
START/SIT DECIDER

Compares predicted fantasy points between two players and recommends the better start
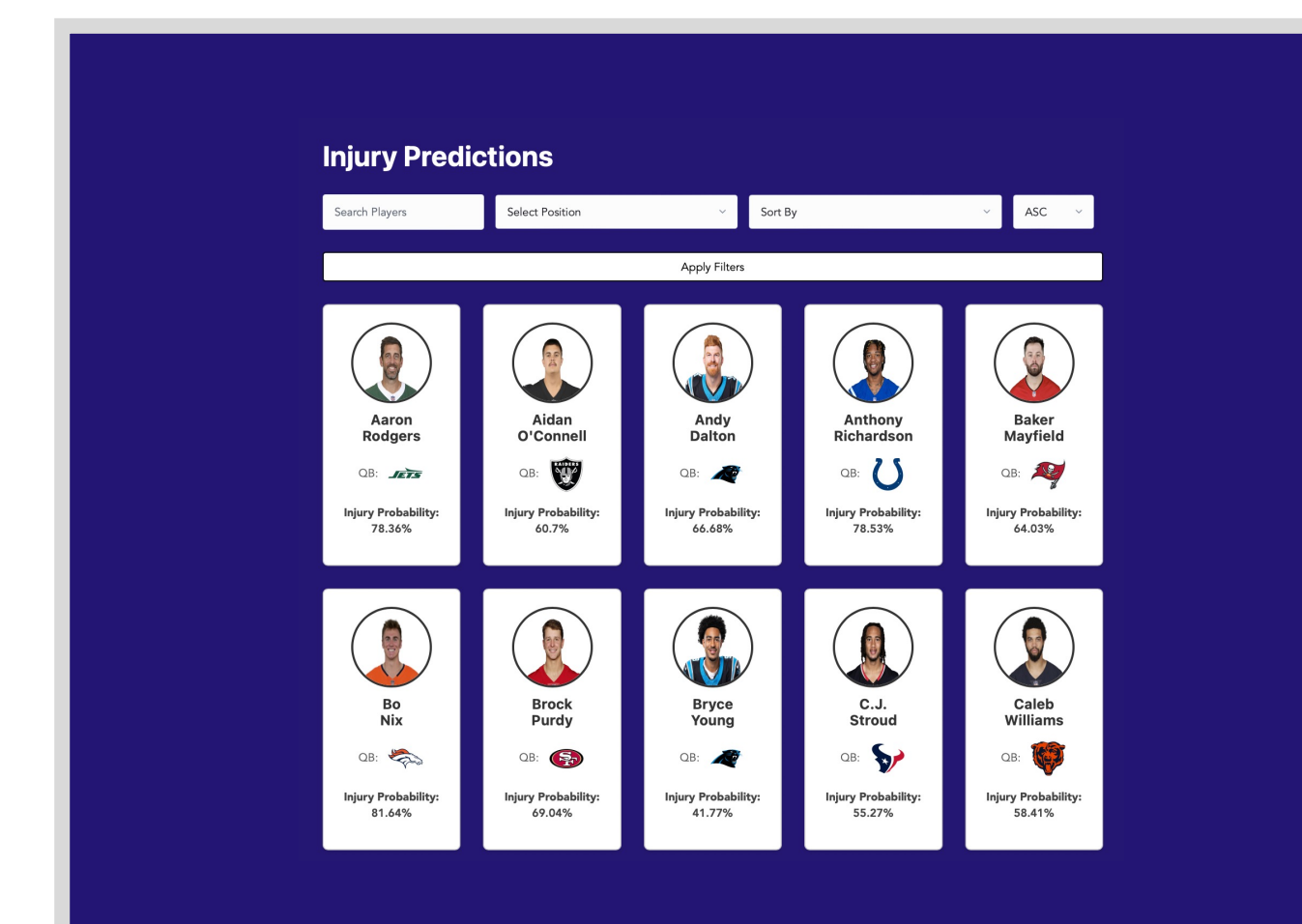
ALL PREDICTIONS

Offers a singular place to view all predictions for all players to help decision making

PLAYER PROFILE

Offers detailed insights into a player's historical trends, performance distributions, and injury recovery impacts
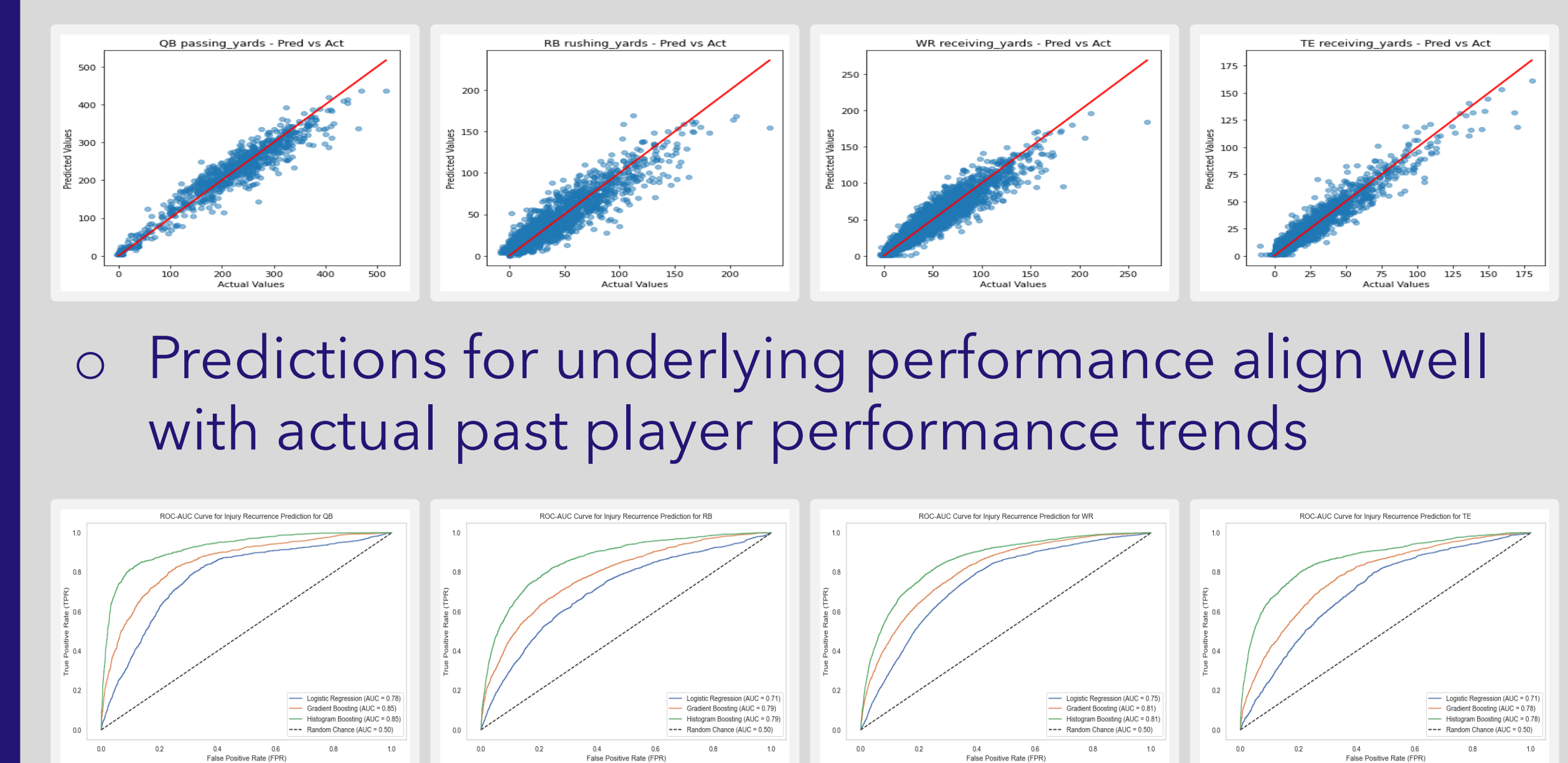
INJURY RISK ANALYSIS

Quantifies injury risk and potential recovery dips for all players to help assist into long-term team management
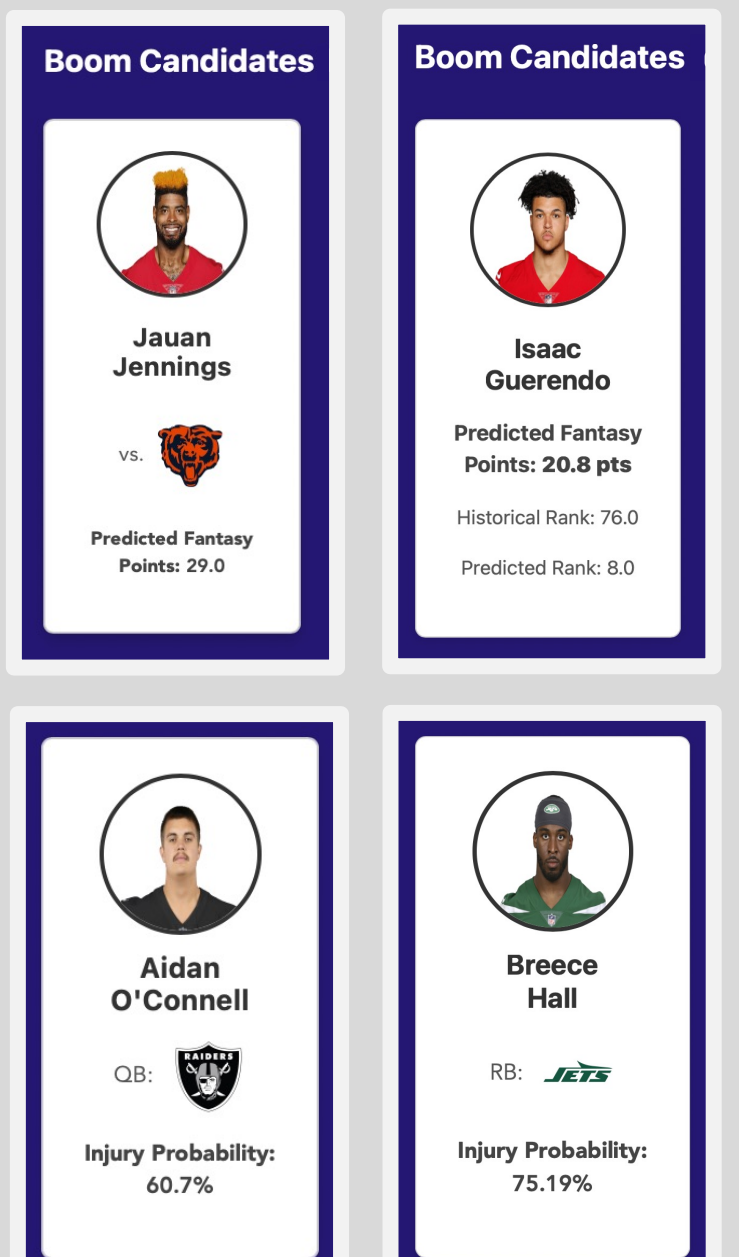
RESULTS & FUTURE WORK

Performance

- Predictions for underlying performance align well with actual past player performance trends
- Injury Model ROC-AUC Curve showcases the model's ability to identify injury risk effectively
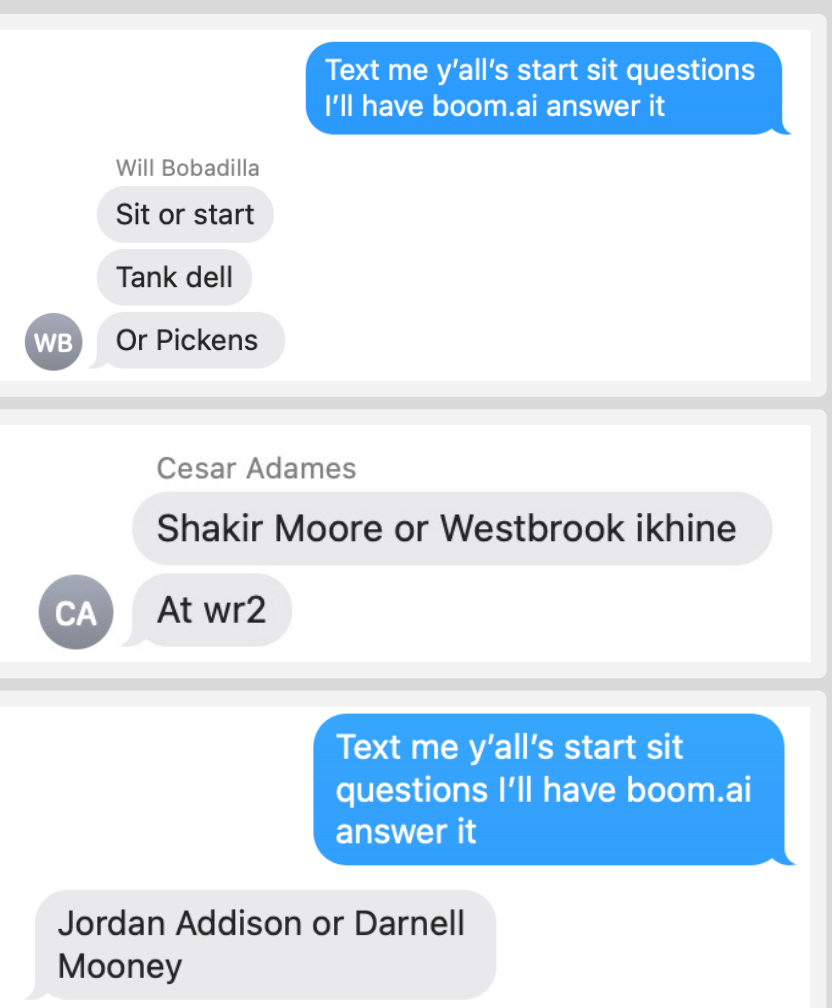
Findings
- Player fantasy point predictions closely match historical trends
- BOOM.AI is identifying players poised for breakout & top waiver options in following weeks like Ameer Abdullah, Issac Guerrendo, Khalil Shakir, & Nick Westbrook-Ikhine
- Quantifying injury risk allows managers to proactively make roster decisions & adjust lineups

Applications
- Actionable insights that empowers fantasy football managers with the tools to make informed decisions each week
- Simplified lineup decisions & risk assessment enabling the users optimize their lineups for the highest chance of success

Enhancements
- Integration of live game data to enable dynamic predictions accounting for game-time decisions, performance, injuries, and other real-time factors
- Expand FLEX PLAY's predictive capabilities to include defense, kicker and special teams
- Enhance user customization ability for various league types & scoring methodologies