Fantasy Prediction Engine – Technical Overview

Executive Summary

Objective:

Develop a fully data-driven NFL player performance prediction engine using offensive and defensive statistics, archetype-based clustering, machine learning, and ensemble meta-learning.

Final Product Description:

The final system produces statistically grounded predictions for player statlines, fantasy points, start/sit choices, waiver targets, trade evaluations, and NFL game outcome projections. It integrates:

• Offensive + defensive archetypes

• Defender-aware coverage modeling

• Baseline deterministic predictors

• Multiple ML models (linear, boosting, defender-aware)

• A meta-learned ensemble for final confidence-weighted predictions

• UI integration and natural-language explanations via Ollama

Action Plan (Brief):

Phase 1: Build database + ingestion pipeline.

Phase 2: Engineer features (offense + defense + coverage).

Phase 3: Build baseline predictor (v2) with defender influence.

Phase 4: Train ML models + defender-aware submodels + ensemble stacker.

Phase 5: Generate fantasy/game outputs.

Phase 6: Build UI + integrate Ollama.

Additional: Archetype Modeling, Ensemble Training System, Defender Data Architecture.