CHELSEA FC DATA CENTER – VIZATHON 2025 SUBMISSION

Author: Enzo Gallo

Hosted Version: enzogallochelseafcvizathon2025.streamlit.app

GitHub Repo : https://github.com/enzogallo/Chelsea-FC-Vizathon-2025

Project Overview

The Chelsea FC Data Center is an interactive web dashboard developed for the Chelsea FC Performance Insights Vizathon 2025. It aims to centralize and visualize all key physical, contextual, and match-related performance data for elite football players.

The platform was designed specifically with the competition's goal in mind:

"To provide actionable insights that empower Chelsea FC's staff to monitor, analyze and enhance player performance."

Purpose and Value

This platform helps Chelsea's coaching and performance staff:
- Track physical readiness and fatigue over time
- Monitor recovery and injury risk
- Analyze sprint load and high-intensity efforts
- Understand match performance in relation to GPS data
- Log and visualize external influencing factors (fatigue, travel, motivation)
- Manage and update individual development plans

It is fully modular, intuitive, and includes both individual and team-wide views. All visuals are interactive, shareable, and exportable.

Modules Included

1. Match Analysis

- Log match actions (passes, shots, interceptions…) with pitch coordinates
- View heatmaps, event maps, and minute-by-minute timelines
- Filter by player and match
- Generate PDF reports for coaching review

2. Physical Fitness

- Visualize daily readiness scores (combining GPS load + recovery)
- Detect critical low readiness days
- Track seasonal trends and build a fitness leaderboard

3. Load Demand

- Analyze training and match distance, accelerations, opposition demand
- Spot overuse or underperformance
- Add new load sessions manually

4. Recovery

- Track subjective recovery scores
- Identify players with low recovery trends
- Explore correlation between distance and recovery
- Highlight at-risk individuals via intuitive cards and graphs

5. Sprint & High Intensity

- Compare players on high-intensity accelerations
- Thresholds configurable (>2.5, >3.0 m/s², etc.)
- Detect explosive vs. endurance profiles

6. Physical Development

- Benchmark % for various physical tests
- Heatmaps and violin plots show player profiles vs. norms
- Follow progress over time
- Identify areas for improvement

7. Injury

- • View injury history and distribution
- • Add new injuries
- • Spot repeating injuries or sensitive periods

8. External Factors

- • Log notes about mental, travel, fatigue, etc.
- • Filter by date and player
- • View clean note history for context

9. Biography / IDP

- • Create and update development goals
- • Track each player's progress status
- • Visual pie chart of completion
- • Full objective history per player

Data Strategy

All modules are powered by either:

- • Uploaded .csv files (included in repo)
- • Simulated data (for GPS and injuries when missing)
- • Realistic mock datasets reflecting elite football environments

Where possible, the dashboard fills missing values, validates entries, and adapts to different column names automatically.

How to Launch Locally ?

Requirements
- • Python 3.9+
- • Streamlit
- • Plotly
- • Pandas
- • Matplotlib, Seaborn, mplsoccer, fpdf
- • Dependencies listed in requirements.txt

▶️ Run the App

1. Clone the project:

git clone https://github.com/enzogallo/Chelsea-FC-Vizathon-2025

cd Chelsea-FC-Vizathon-2025

2. Install dependencies:

pip install -r requirements.txt

3. Launch the app:

streamlit run app.py

The dashboard will open in your browser (usually http://localhost:8501).

Hosted Version

You can explore the live version here:

enzogallochelseafcvizathon2025.streamlit.app

No installation required – ready for jury members, analysts and coaches to test instantly.

Key Features Recap

Feature	Purpose
Modular dashboard	Each performance domain is isolated for clarity
Multi-player filtering	Coaches can zoom into individual profiles or review squad-wide trends
Manual form inputs	Allows coaches to enter data directly without Excel or APIs
Export to PDF	Reports for players or staff can be generated instantly
Auto data cleaning	Handles missing values, formats columns, adds synthetic events
Full visual context	Heatmaps, charts, bar plots, scatter trends, interactive visuals

Conclusion

This dashboard is a data-driven assistant for elite football coaching. It doesn't just show charts – it tells stories, shows trends, and provides actionable insights for those who need to make decisions fast.

The Chelsea FC Data Center reflects a modern, real-world approach to sports performance – combining context, visuals, and flexibility.