CFC Vizathon Entry

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Overview

This document summarises the key features for my entry into the CFC Performance Insights Vizathon. The dashboard presented in this document was developed primarily in Python using the Dash package.

A live, interactive version of my entry can be found at: https://ta-cfc-vizathon.onrender.com/

Please note that due to being hosted on the free tier of render (https://render.com/) which comes with limited CPU resources and no background workers, dashboard page and plot loading can be slow at times.
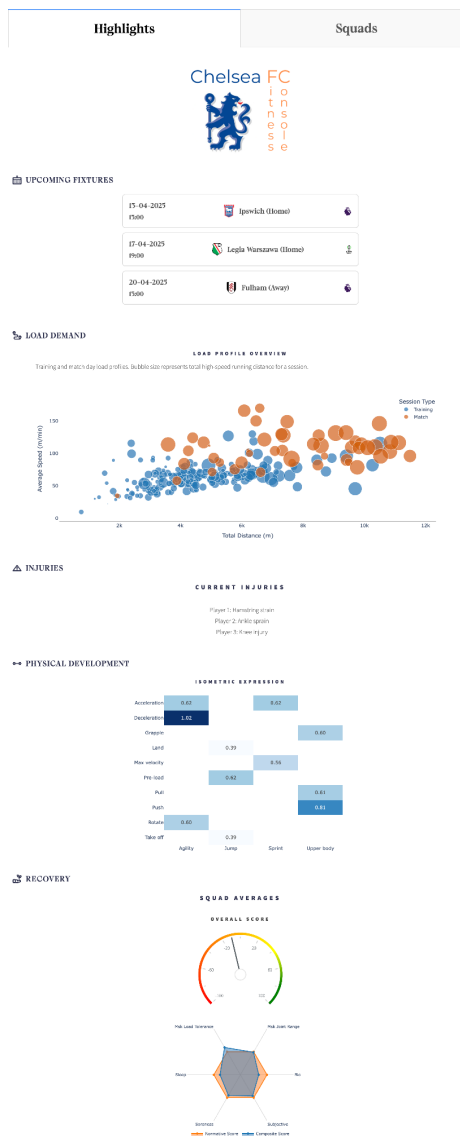
The source code and data files for this project can be found at: https://github.com/ThomasAston/CFC-Vizathon

The data used to create the interactive visualisations in this dashboard is a combination of real-world football data from the 2023/2024 season from API-football (https://www.api-football.com/) (used to create the squad lists and player biographies, including radar plot comparisons of their per 90 minute match stats for the season), as well as the reference data provided by CFC (used to create the Load Demand, Physical Development and Recovery modules), and mock data (used to create the Injury History and External Factors modules).

The key features of the dashboard are highlighted on the following pages, but to see the complete functionality of the platform it is recommended to watch the attached video or to interact with the dashboard online.

Key Features

Landing Page Features

Tabs for highlights and squads pages

Upcoming fixtures (pulled from API-football)

Summary visuals for individual modules

Responsive, scalable design suitable for all devices and orientations

Squads Page Features

Highlights	Squads
My Squads	Opposition

SELECT A SQUAD...

Senior Men

SELECT A COMPETITION...

Premier League

SELECT AN OPPOSITION...

Manchester United

GOALKEEPER

A. Onana

DEFENDER

Diogo Dalot

J. Evans

R. Varane

H. Maguire

A. Wan-Bissaka

V. Lindelöf

L. Shaw

MIDFIELDER

Bruno Fernandes

S. McTominay

Casemiro

K. Mainoo

C. Eriksen

S. Amrabat

M. Mount

ATTACKER
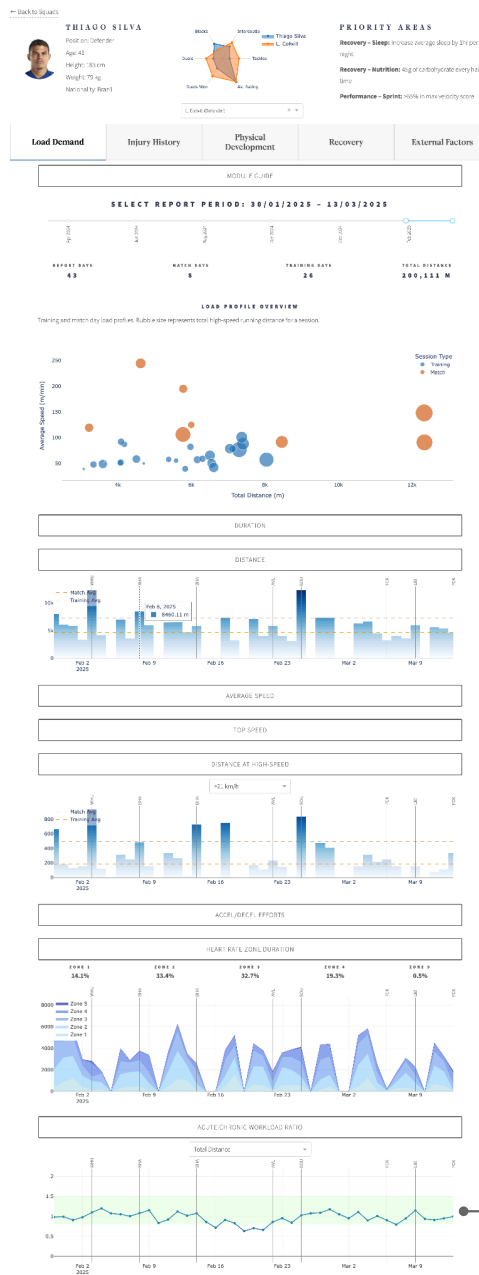
A. Garnacho

M. Rashford

R. Højlund

Antony

A. Martial

Tabs allow switching between own team and opposition squad views.

Efficient team selection with dynamically updating dropdown menus.

Complete list of player names, images and statistics pulled from API-football.

Load Demand Features

Player biography highlighting key information, with radar plot comparing per 90 match statistics (from API-football) between players, and individual priority areas highlighted.
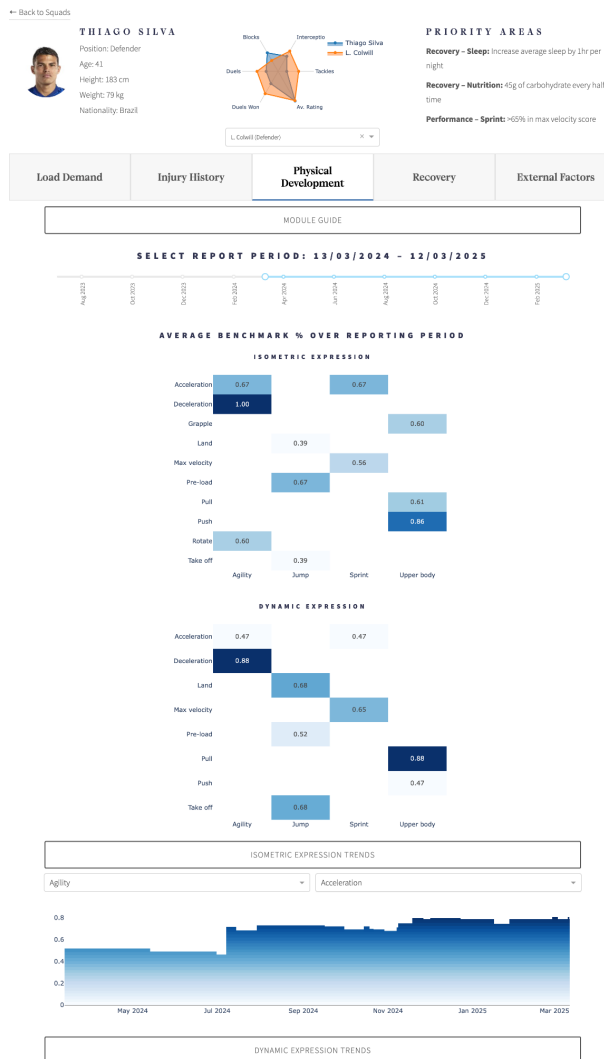
Slider for adjusting reporting period dates

Dynamic visualisation of load demand with tooltips enables rapid identification of outlier sessions.

Custom-built gradient bar charts with training and match averages overlayed for enhanced visualisation of metric magnitudes over time.

Collapsible, vertically aligned plot windows enable rapid time-consistent comparison between metrics.

Acute:Chronic Workload Ratio (ACWR) provides indication of under/overtraining risk over time.
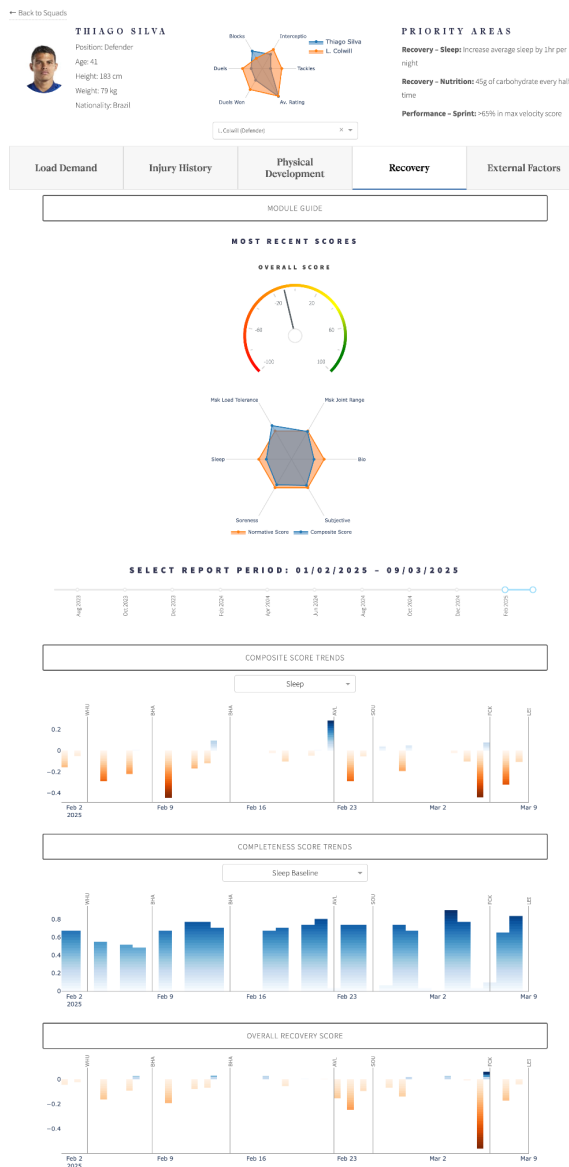
Physical Development Features

Heatmaps displaying average benchmark percentages over report period enable rapid identification of players' physical strengths/weaknesses in both isometric and dynamic expressions

Heatmaps displaying average benchmark percentages over report period enable rapid identification of players' physical strengths/weaknesses in both isometric and dynamic expressions

Development over time visualised with collapsible gradient bar charts

Recovery Features

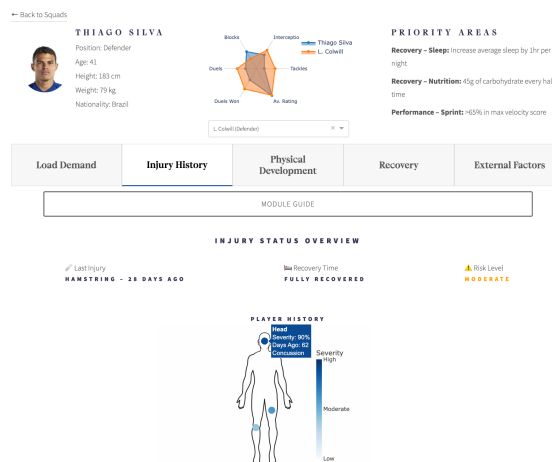Overall recovery dial for immediate, easy to understand visual feedback

Radar plot for easy assessment of current individual recovery metrics.

Plots of individual metric composite scores over time for in-depth analysis.

Completeness scores.

Overall recovery score over time.

Injury History Features

Indication of most recent injury, time to recovery and current injury risk level.

Interactive injury body map for studying all injuries sustained by a player, including their severity, when they occurred and what type of injury it was.