Aalto-yliopisto
Perustieteiden
korkeakoulu

Comparing Optimization Algorithms for Fantasy Premier League (FPL) Team Selection (topic presentation)

Lukas Lindholm

15.06.2026

Advisor/Supervisor: *Kai Virtanen*

This work may be stored and published on Aalto University's open websites. All other rights reserved

Aalto-yliopisto
Perustieteiden
korkeakoulu

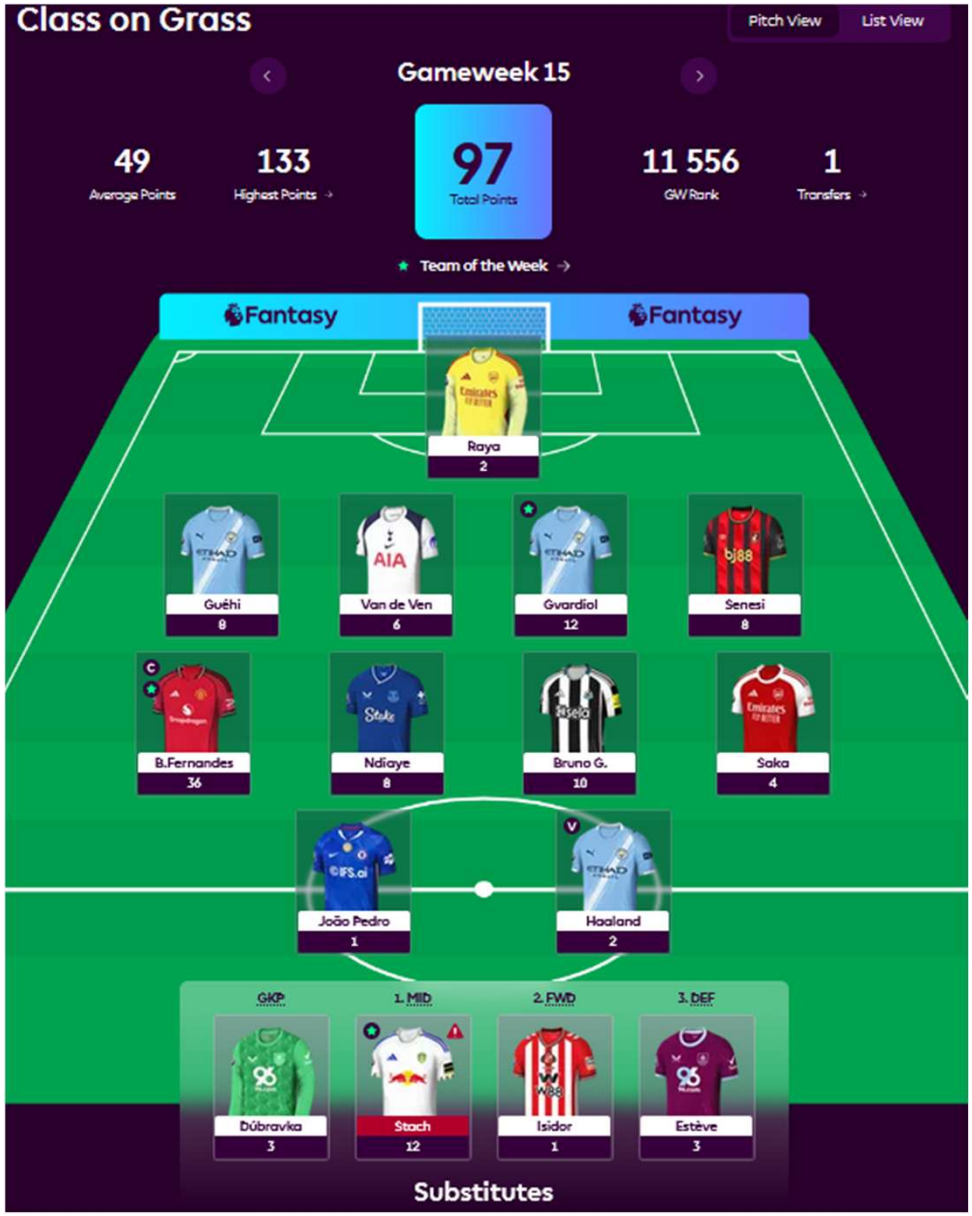
Motivation

- Fantasy sports games increasingly popular
- Over 13 million Fantasy Premier League (FPL) users 25/26 season
- Perform well → win prizes (and beat your friends)

© Copyright The Football Association Premier League Limited, 2016

FPL in brief

- Users select 15 players with a fixed budget
- Players score points according to FPL rules
- Succeeding requires predicting top point scorers



RESEARCH QUESTION:

How does stochastic integer programming perform compared to deterministic integer programming in FPL team selection?

Implementation

Integer programming (IP)

- Deterministic approach
- Pre-filter expected points (*xP*) data
- Team optimization based entirely on *xP*
- **Compare ex-post performance to:**

FPL users, SIP performance

Stochastic integer programming (SIP)

- Pre-filter *xP* data
- Simulate *k* point outcomes for each player based on statistics and FPL rules
- Optimize team over all *k* outcomes
- **Compare ex-post performance to:**

FPL users, IP performance

Delimitations

- Existing expected points (*xP*) data will be used
- Some game mechanics (chips, transfers) will be overlooked

Tools

- Python
- Julia

Schedule

- Exploring topic, related works, topic presentation 06/2026
- Implementing models, writing thesis 06-08/2026
- Results and thesis ready by the end of 08/2026

Literature and references

- Ramezani, Dinh: A data-driven framework for team selection in Fantasy Premier League (2025)
- Eilertsen et al.: Developing a Forecast-Based Optimization Model for Fantasy Premier League (2018)
- Gupta: Time Series Modeling for Dream Team in Fantasy Premier League (2017)
- Santoro: Optimization and Machine Learning techniques: An application to the Fantasy Premier League (2025)
- Rajesh et al.: Player Recommendation System for Fantasy Premier League using Machine Learning (2022)
- Bangdiwala et al.: Using ML Models to Predict Points in Fantasy Premier League (2022)
- Vaastav: FPL Historical Dataset (2022) https://github.com/vaastav/Fantasy-Premier-League/