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# TREBUGET

AI powered player analytics

# The Problem

😓 Player stats require manual play-by-play data entry

📉 Insights limited to our own team

🤕 Can’t track player fatigue statistics outside of practice

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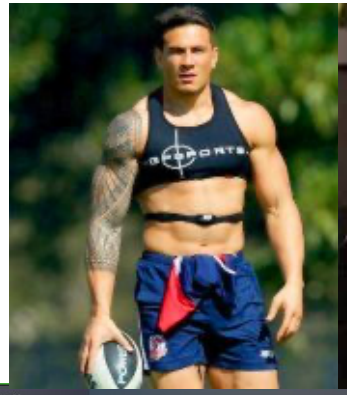
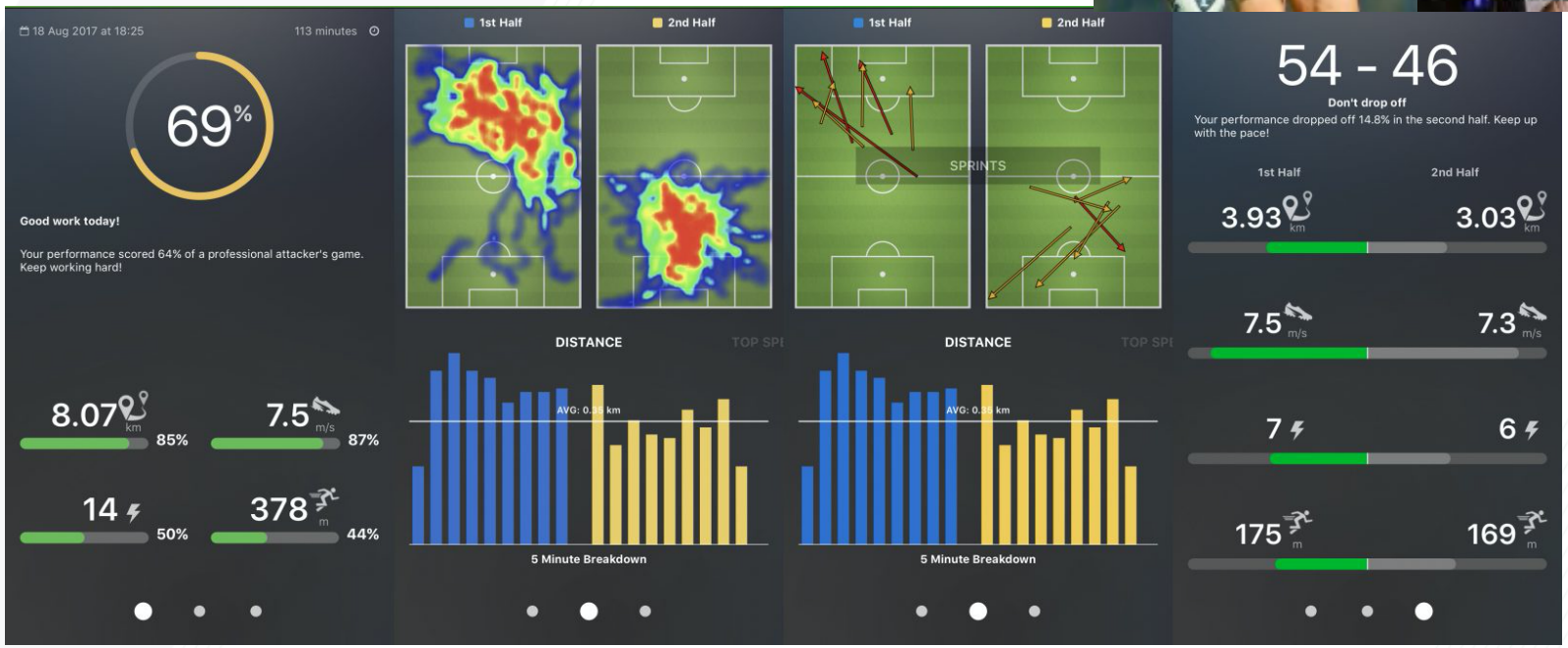
# State of player analytics

- **Catapult** has great analytics, but depends on GPS
- Rules prohibit Catapult during games

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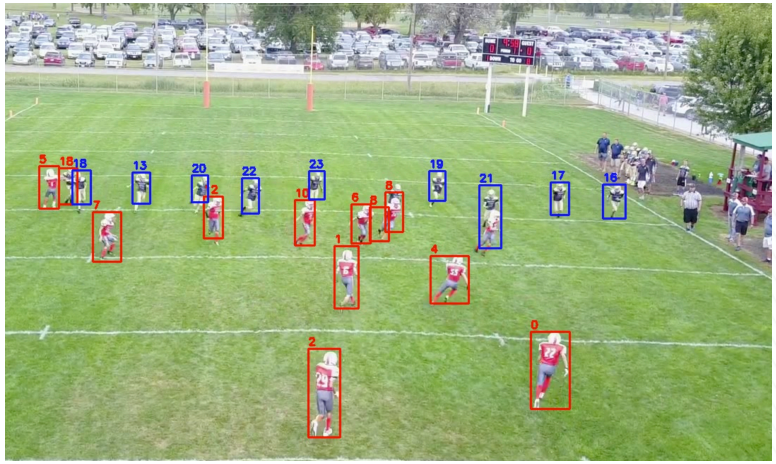
# The Solution

📊 Gain insights from games that restrict technology usage

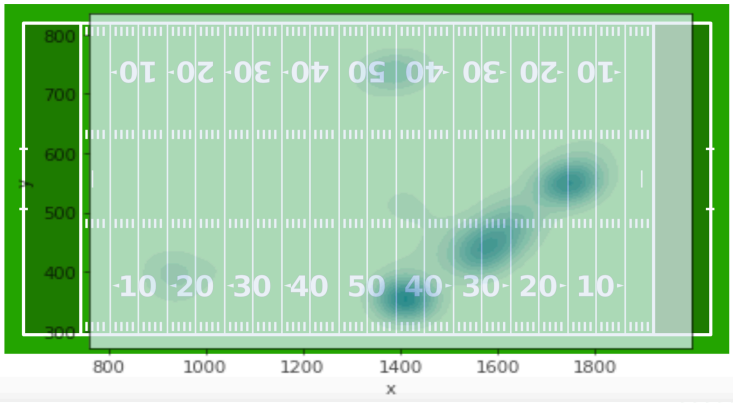
🤔 Learn the weaknesses of opponent teams

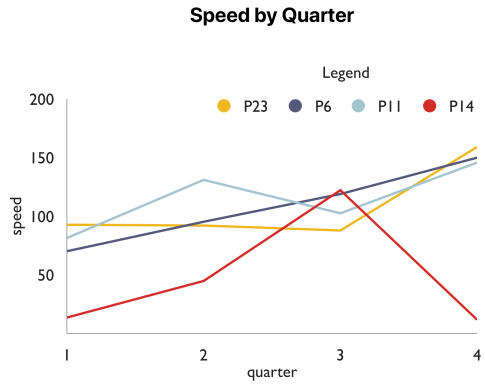
🥼 Injury prevention and strategic benching

📲 Analytics dashboard to track player and team game performance



Heatmap

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# >_Demo

# Tools🔧

🐍 Python- Pandas, OpenCV

🌟 React- Victory JS

🧠YOLOv3 - deep learning/computer vision

# Future Potential 🔮

🤖 GPUs to improve accuracy

📽️ High resolution cameras with fixed angles for home games

🏆 Identify strategic formations, matchups, plays, quarters

# Future Goals 🔮

ID process does not account for referees. Also, program does not automate quarters (will have to be broken into four different recordings. Lastly, camera angle must be fixed for the whole game (cannot use TV footage).

Next Steps

1. Standardize process of video collection (fixed wide or long angle footage)
2. Build formation analysis for own & opponent teams
3. Build insight suggestions (e.g. player 3 usually gets tired by the 5$^{th}$ down of a drive in the 3$^{rd}$ quarter)

# Purpose

Employ computer vision to detect and exploit weaknesses in opponent gameplay, as well as improve our own. By measuring players' variation in velocity throughout their past games, GT Football will be able to more reliably predict player fatigue and thereby help avoid injury. Ultimately, the analytics dashboard will measure each player's game speed against himself, his personal matchup, players of the same position, and the team average.