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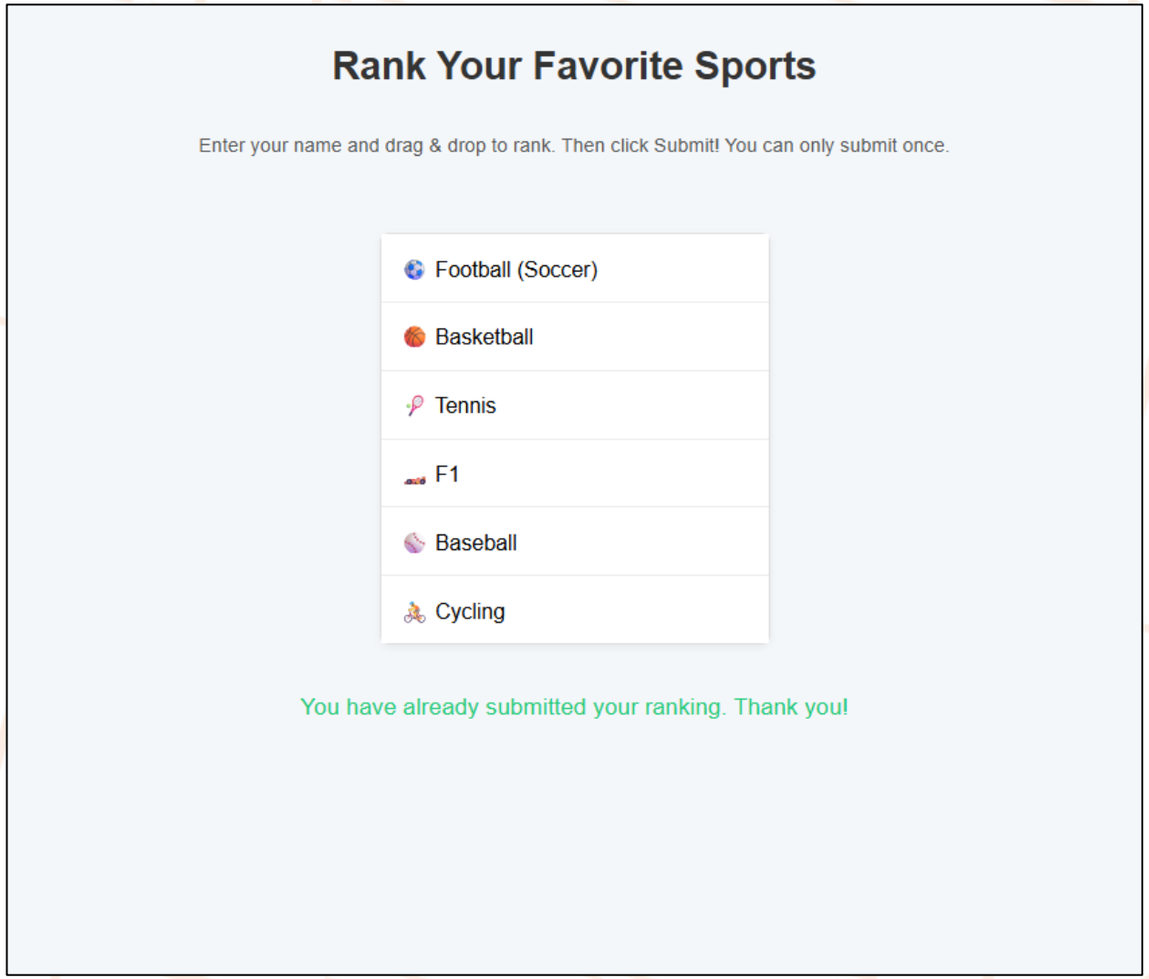
ALL-STAR SPORTS EDITION

SPORTS DATA VISUALIZATION FOR THE WEB

Live Intro Demo



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Agenda

Foundations

- Goals
- Why Visualization?
- Real-World Examples
- Tools Overview
- FANS Framework

Dava-Viz Mini-Demos

Final Demo

Wrap-up & Resources

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Goals

- 📖 Turn Stats → Stories
- 🛠️ Build Interactive Fan Tools
- 🗺️ 📊 Fuse Maps + Metrics

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Why Visualization?

- Tell a memorable story
- Spot patterns instantly
- Guide smarter decisions
- Hook users with interactivity

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Real-World Examples

- 🏈 NFL Next Gen Stats Charts
- ⚽ Pro League Team Pages
- ⚾ Baseball Savant Visuals

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Tools Overview

Chart.js

D3.js

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F.A.N.S. Framework

F – 🔍 **F**ilter by Interest

A – 📊 **A**nalyze Stats

N – 🗺️ **N**avigate the Map

S – 🎲 **S**imulate Scenarios

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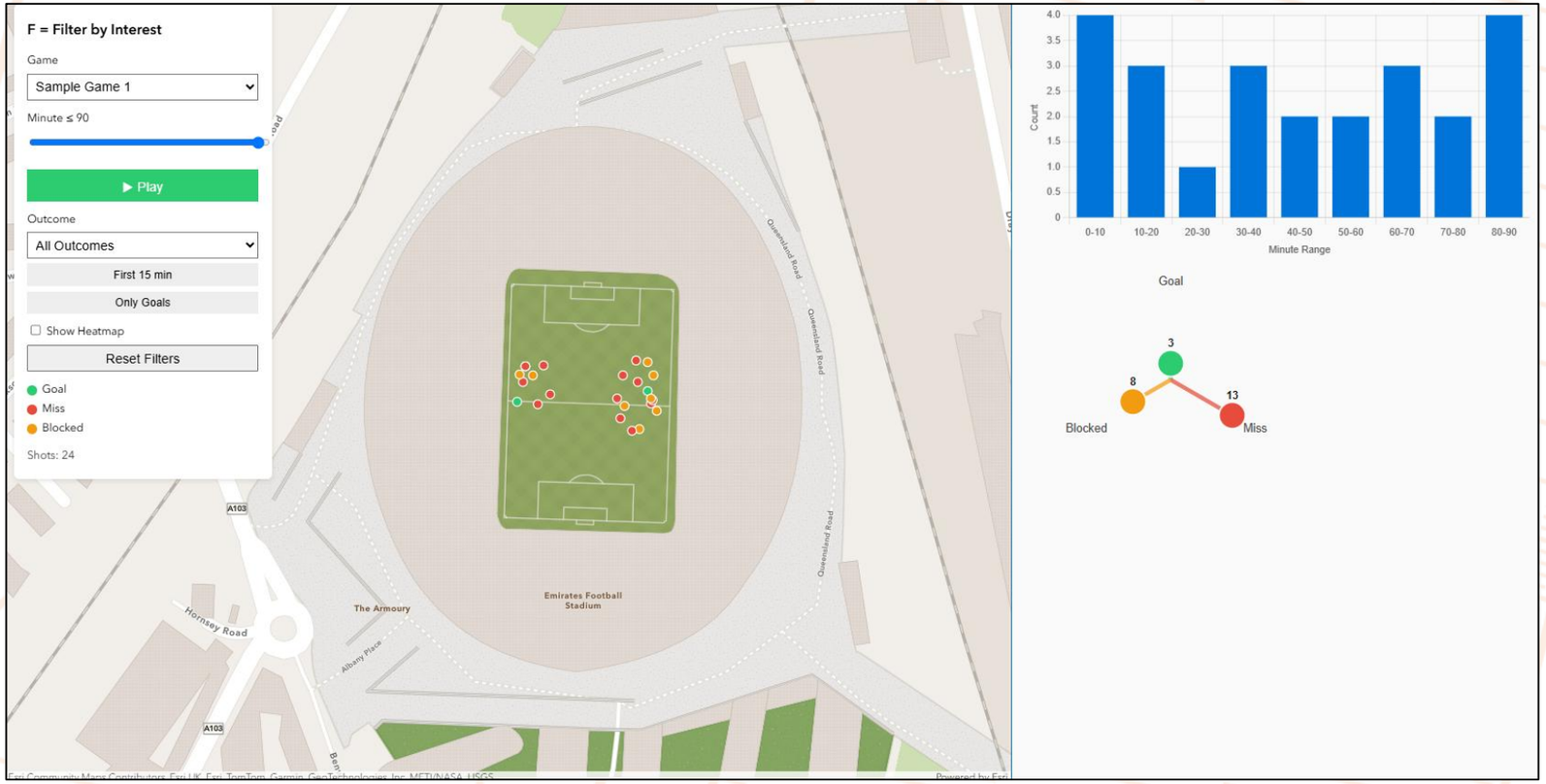
🔍 F – Filter by Interest

Empower fans to zero-in on the exact slice of play they care about.

Demo 1: **F**ilter by Interest



- Filter shots by time, type, or outcome
- Instantly see map and stats update

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Key Takeaways: Filter by Interest

- From Pitch Coordinates ➔ Map Coordinates
  - lon = stadiumLon + (x_norm – 0.5) × pitchLonSpan
  - lat = stadiumLat – (y_norm – 0.5) × pitchLatSpan
- Instant filtering by time, outcome, or event
- Interactive map and charts update in real time
- Uses ArcGIS JS, Chart.js, and D3.js for data-driven visuals

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A – **A**nalyze Stats

Equip fans to dive into key performance metrics and uncover deeper insights.

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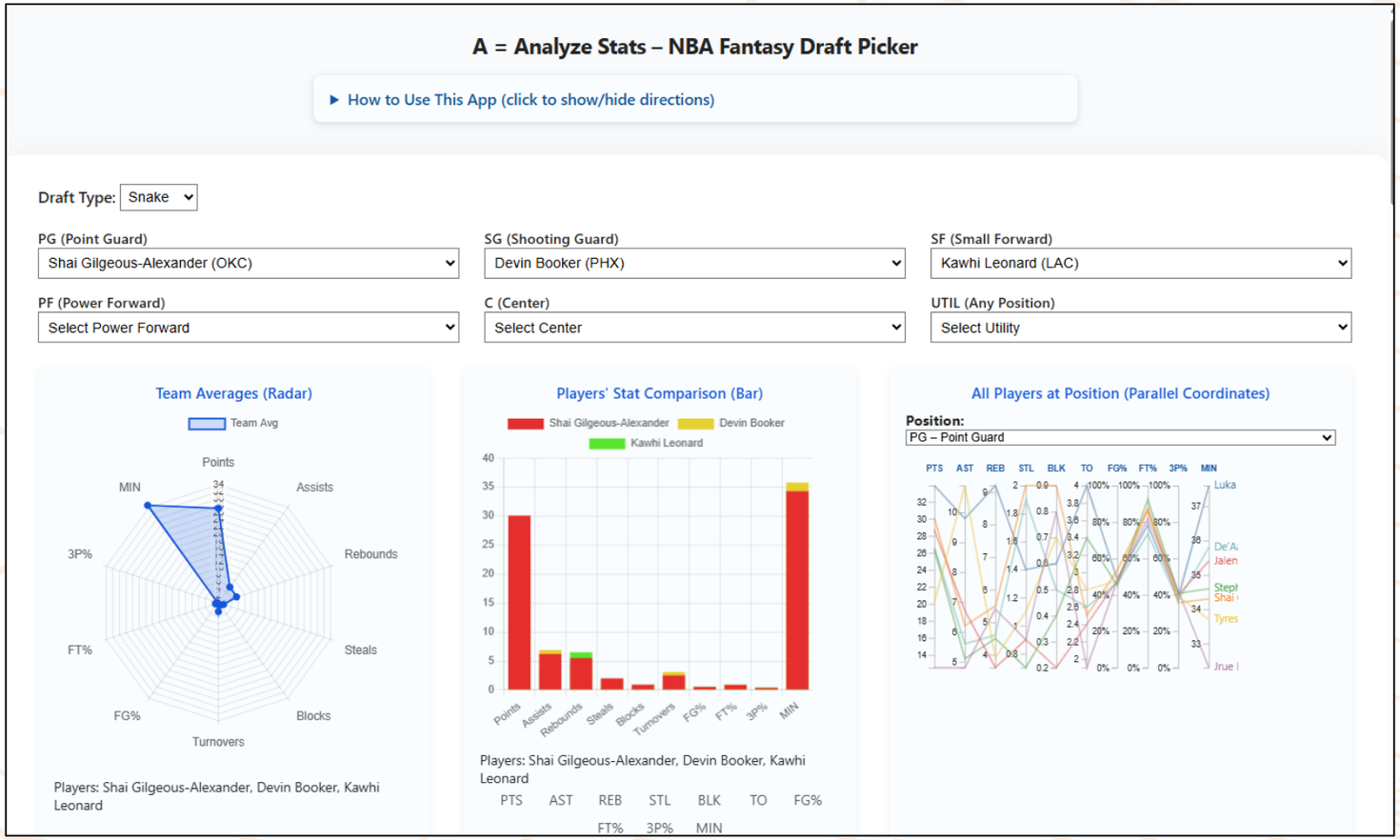
Demo 2: **A**nalyze Stats



- Live-updating charts
- Data-driven picks

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Key Takeaways: **A**nalyze Stats

- Real-time stat dashboards drive adaptive, data-led decisions
- Chart.js + D3.js power rich, responsive visualizations
- Reactive dropdown logic ensures context-aware user flows

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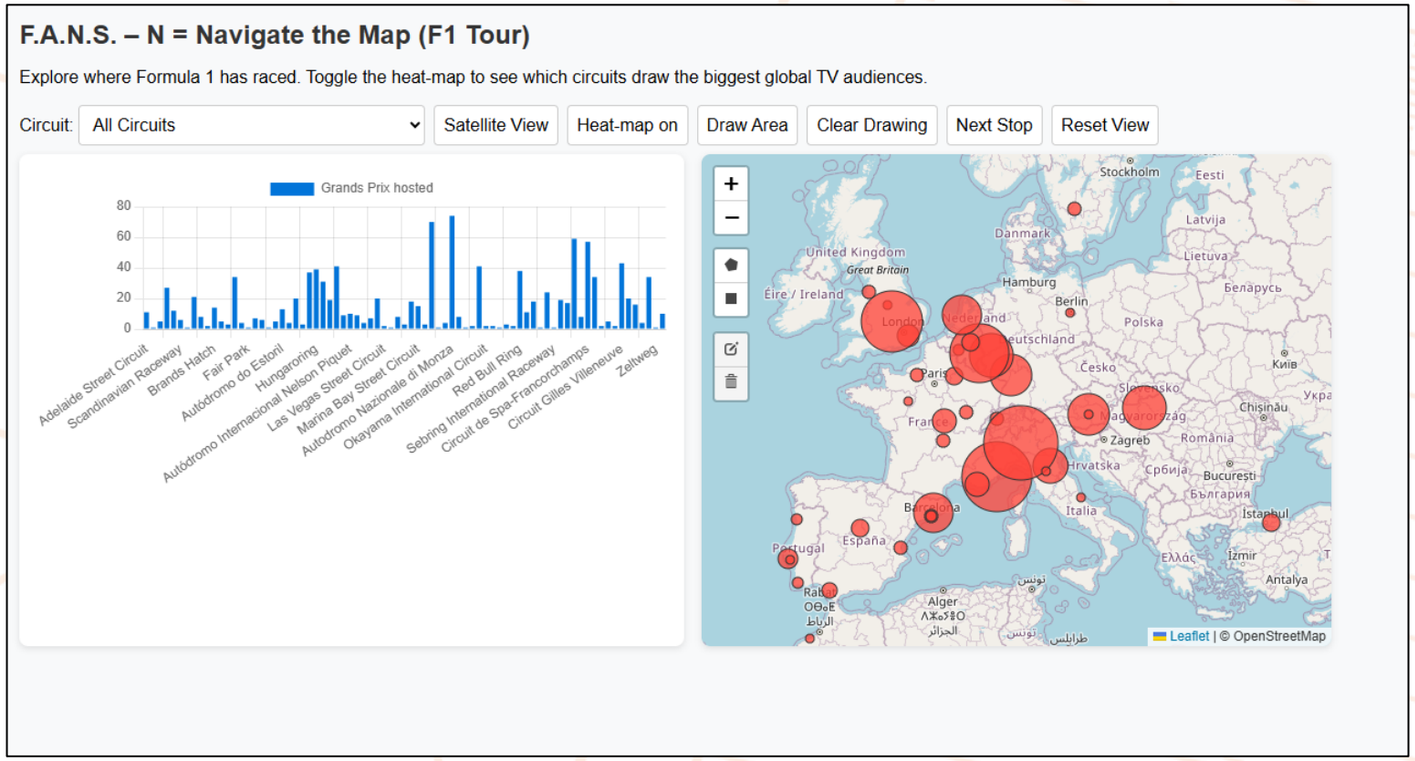
N – **N**avigate the Map

Let fans explore the spatial story behind the action on an intuitive, interactive canvas.

Demo 3: **N**avigate the Map



- Explore where F1 races happen
- Connect place with data interactively

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Key Takeaways: **N**avigate the Map

- Navigate sports data by location
- Interactive map + chart views
- Built with Leaflet, Chart.js, Ergast API

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S – **S**imulate Scenarios

Give fans the power to rewrite history and explore “what-if” scenarios for unlimited replay value.

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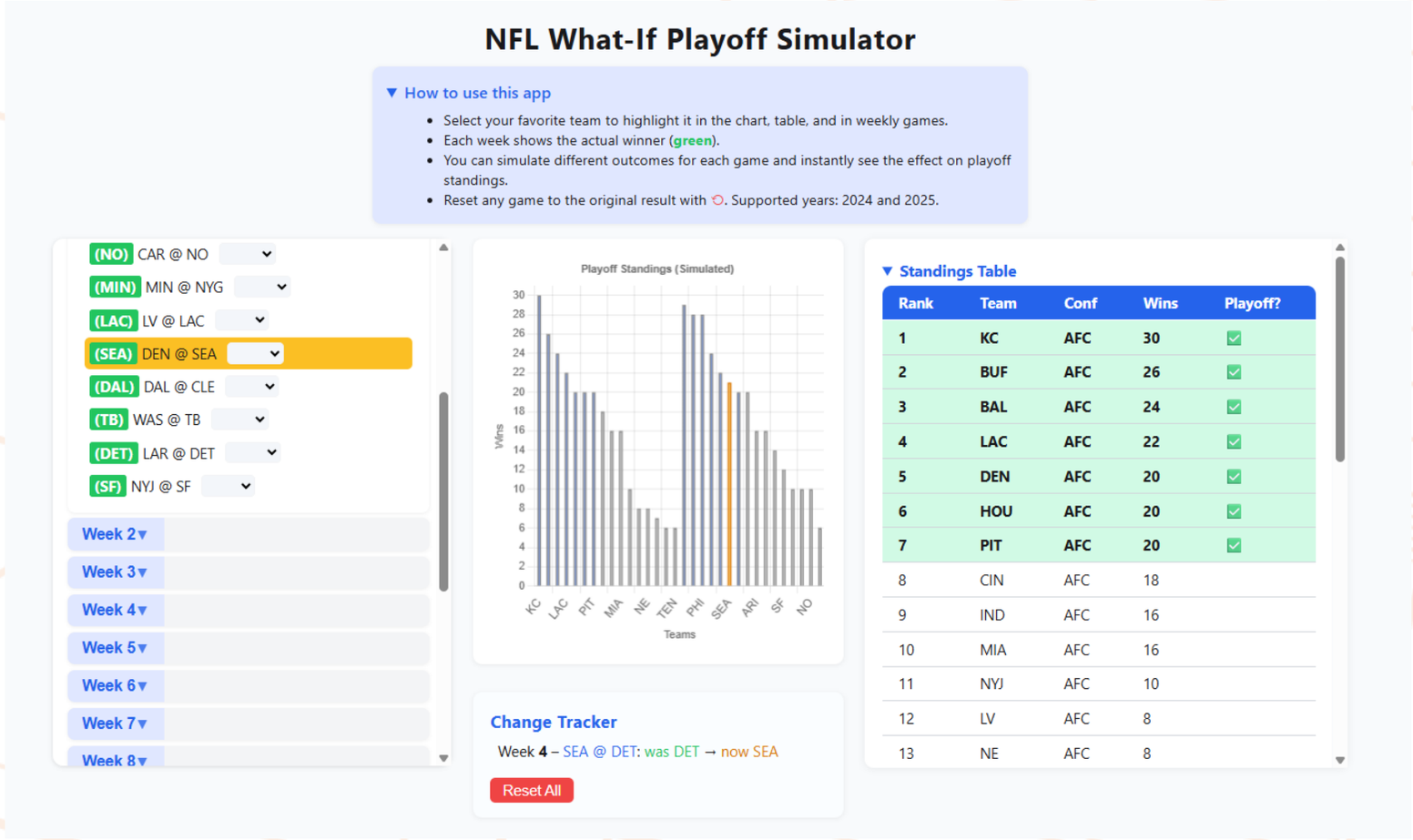
Demo 4: **S**imulate Scenarios



- Explore where F1 races happen
- Connect place with data interactively

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Key Takeaways: **S**imulate Scenarios

- Live “what-if” game flips
- Auto change log
- AFC/NFC split with fresh ranks
- SportsData.io + Chart.js

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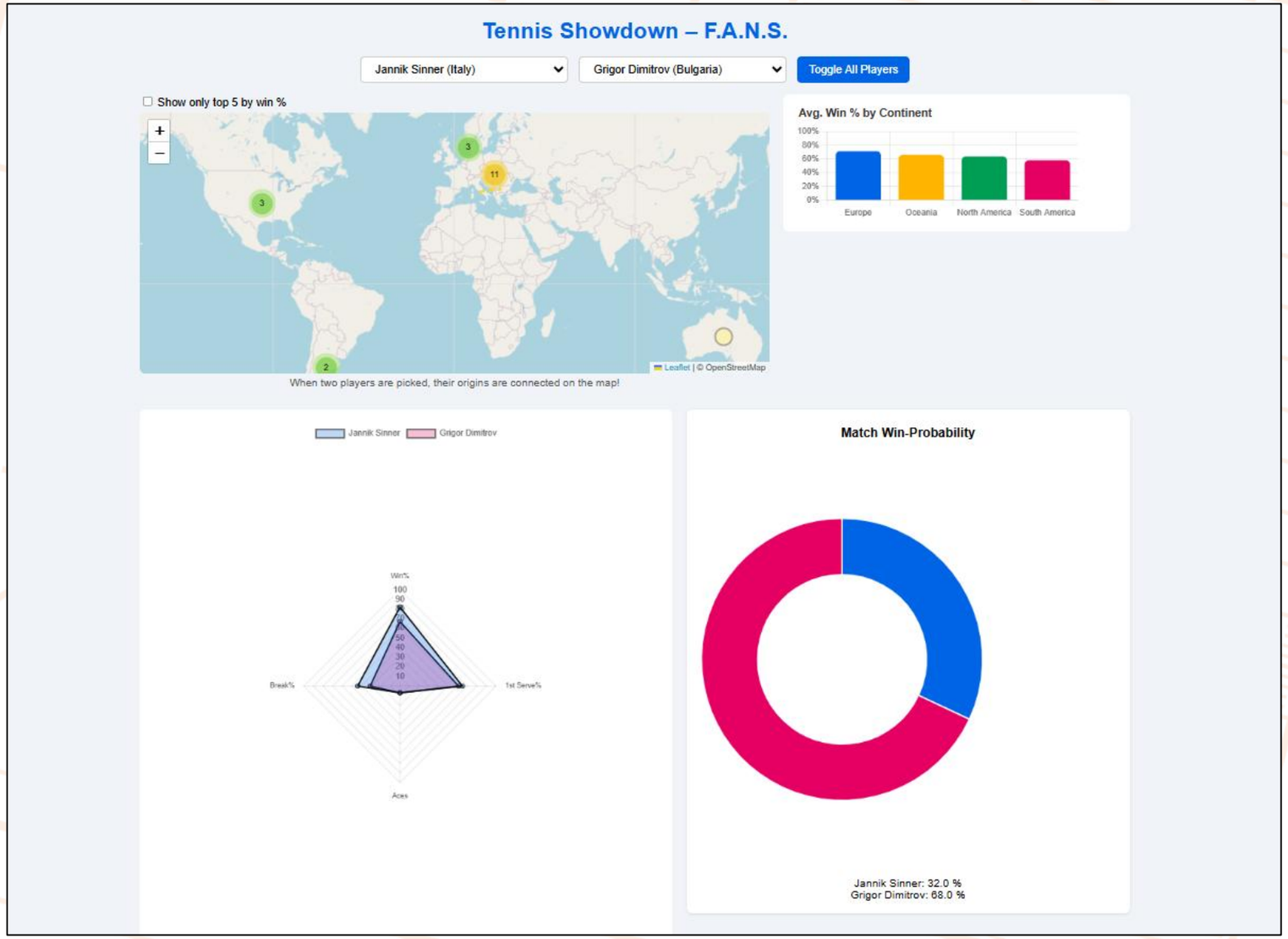
Final Integration Demo



- Visualize global matchups
- Filter and explore

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Final Integration Takeaways

- Context transforms stats
- Interactivity drives insights
- Visual storytelling matters
- Simple code, big impact

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F.A.N.S. + Tools Summary

F.A.N.S. Framework

- **Filter by Interest:** Let fans explore what matters to them.
- **Analyze Stats:** Make complex performance data simple and interactive.
- **Navigate the Map:** Add geographic context for a global sports perspective.
- **Simulate Scenarios:** Turn “what if?” into engaging, visual experiences.

Key Tools & Libraries

- **Leaflet.js:** Interactive, customizable maps for player origins & context.
- **Chart.js & D3.js:** Beautiful charts for stats, trends, and comparisons.
- **Modern JS/HTML/CSS:** Easy integration for live data and rich user interactivity.

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Tips & Best Practices

- Focus on Fan Perspective
- Keep Data Visualizations Clear
- Emphasize Discoverability
- Iterate and Gather Feedback

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Resources

- Repo for this talk – demos and slides
- Metrica-Sports Sample Data – Raw event and tracking data for soccer/football analysis
- Leaflet – Interactive web mapping library
- Chart.js – Simple, powerful charting
- D3.js – Advanced data-driven visualizations
- SportsDataIO - Commercial sports statistics API
- Esri Developer Documentation - Guides & References for ArcGIS SDKs
- Ergast F1 API - Historical Formula 1 race & circuit data
- API-Sports Tennis API - comprehensive tennis stats & player information

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Thank You, Techorama!

Slides and Demos

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