Sports Insight Bot — Documentation

1. Introduction

In recent years, sports analytics and digital fan engagement have grown rapidly. Users increasingly seek instant access to sports-related information such as match insights, player statistics, and general sports knowledge. Traditional websites often require users to manually search through multiple pages, which is time-consuming and inefficient.

The Sports Insight Bot is a full-stack chatbot-based application designed to simplify access to sports information through a conversational interface. By allowing users to ask questions in natural language, the system enhances user experience and accessibility. The project demonstrates practical implementation of modern software engineering concepts including full-stack development, API integration, and cloud deployment.

2. Proposed Solution

The proposed solution is an AI-powered sports chatbot system that enables users to interact with a conversational agent to receive sports-related insights.

The solution consists of:

- A backend service responsible for handling chatbot logic, processing user queries, and generating responses using gemma model by google which takes both text as well as image as inputs and we have also added context memory to the model so the conversation feels flowing.

- A frontend non-flashy web interface that allows users to interact with the chatbot in a simple and intuitive manner.

- A client–server architecture, where the frontend communicates with the backend through API calls, we used open router for creating our api key.

By using a modular design and separating frontend and backend , the system ensures scalability, easy maintainance, and ease of future enhancement.

3. Unique Selling Proposition (USP)

The key differentiating features of the Sports Insight Bot include:

- Conversational Interface: Users can interact using natural language instead of navigating complex menus.
- Fast Information Access: Reduces the time required to obtain sports-related insights.
- Monorepo Architecture: Both frontend and backend code are maintained in a single repository for better visibility and evaluation.
- Cloud Deployment: Demonstrates real-world deployment using modern cloud platforms like render(backend) and vercel(frontend).
- Scalable Design: Backend and frontend are loosely coupled, allowing independent scaling and upgrades.

These factors make the project both technically sound and practically relevant.

4. Target Users

The target audience for the Sports Insight Bot includes:

- Sports Enthusiasts: Users who want quick answers to sports-related queries.
- Students and Learners: Individuals interested in sports knowledge and analytics.
- Casual Fans: Users who follow sports occasionally and prefer an easy-to-use interface.
- Academic Evaluators: Faculty members assessing full-stack development and software design skills.

The system is designed to be intuitive, requiring minimal technical expertise from the end user.

5.Kano Model

The Kano Model is used to categorize system features based on their impact on user satisfaction. For the Sports Insight Bot, features are classified into Must-Have, Performance, and Attractive (Delighters) categories as follows:

1. Must-Have Features (Basic Requirements)

These features are essential for the chatbot to function. Their absence would result in complete user dissatisfaction, while their presence does not significantly increase satisfaction because users naturally expect them.

Feature: Text-to-Text Conversational Response

2. Performance Features (One-Dimensional Requirements)

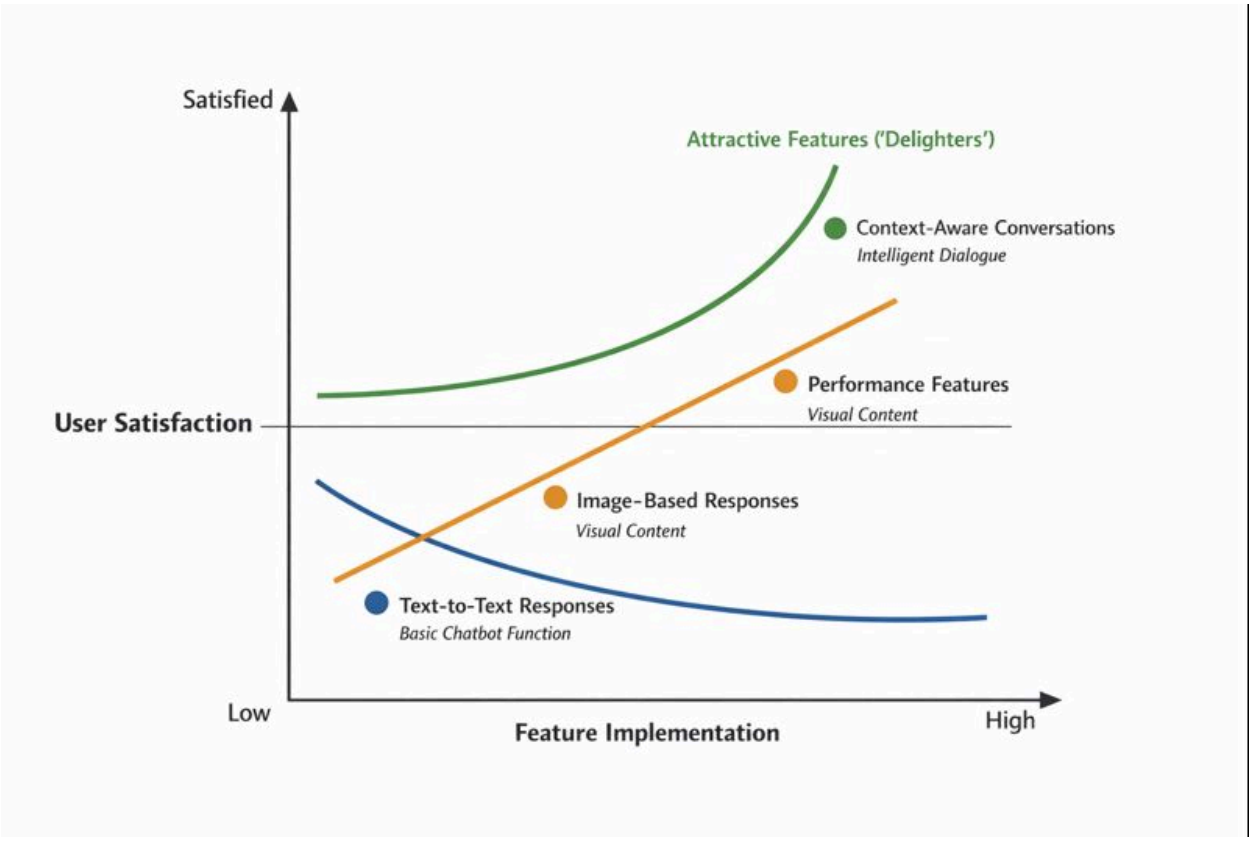
These features directly influence user satisfaction in proportion to their quality and effectiveness. Better implementation leads to higher satisfaction.

Feature: Image-Based Responses

3. Attractive Features (Delighters / Excitement Factors)

These features provide an additional competitive edge. Users do not explicitly expect them, but their presence greatly enhances perceived value and user delight.

Feature: Context Awareness and Intelligent Conversation Flow



6. Future Scope

The project can be extended in several ways:

- Live Sports Data Integration: Fetch real-time match scores and statistics.
- User Authentication: Enable personalized experiences based on user profiles.
- Analytics Dashboard: Track user interactions and popular queries.

These enhancements can significantly increase the practical value of the application.

7. Conclusion

The Sports Insight Bot successfully demonstrates the implementation of a full-stack chatbot application. By combining a scalable backend with a responsive frontend, the project addresses the need for quick and accessible sports information.

The use of a monorepo structure, cloud deployment, and clear system design makes the project suitable for academic evaluation as well as future real-world extensions. Overall, the project reflects a understanding of full-stack development, system architecture, and user-centric design principles.