



PARSHWANATH CHARITABLE TRUST'S

A.P. SHAH INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering
Data Science



Hype Cast : Event Popularity Detector.

Sakshi Salve 24207007

Dhruvraj Wankhade 24207009

Mohit Kadam 24207004

**Project Guide
Prof. Shubhangi Soni**

Outline

- Introduction
- Objectives
- Literature Survey of the existing systems
- Limitations of the existing systems
- Problem statement
- System Design
- Technologies and methodologies
- Implementation
- Conclusion
- References

Sustainable Development Goals (SDG) mapped

SDG 9: Industry, Innovation, and Infrastructure

Data-driven insights: Hype Cast leverages data analytics and machine learning to predict and analyze event popularity, supporting innovation in event planning and management.

Introduction

Events like concerts, conferences, and sports are vital to society but predicting their popularity is often challenging. Poor estimates can cause low turnout, overcrowding, or financial losses. To overcome these issues, data-driven solutions are needed to accurately forecast event popularity and improve planning.

Objectives:

- ▶ Develop a supervised ML model to predict event hype and attendance using structured and unstructured data sources.
- ▶ Build a predictive module to evaluate event financial and logistical feasibility using cost, budget, and turnout estimates.
- ▶ Implement a recommendation engine using engagement metrics and regional analytics to suggest relevant events to users.
- ▶ Design a web-based interactive interface for real-time prediction visualization and user interaction with model outputs.

Literature Survey of the existing system

Authors	Title	Year	Publisher/source	Methodology
Patel, K., & Mehta, S. [4]	<i>Integrated Social and Ticketing Data Framework for Event Prediction</i>	2023	IEEE Access	Proposed a real-time analytics framework merging social buzz, demographics , and ticket sales data to forecast event success.

Zhang, L., et al. [5]	Smart Event Trend Analysis using Machine Learning and Social Signals	2024	Elsevier Journal of Big Data	Utilized NLP and sentiment analysis on social media trends to provide early insights into event popularity and audience behavior.
Sharma, R., et al. [3]	<i>AI-Driven Event Analytics for Predicting Audience Engagement</i>	2023	SpringerLink	Developed an AI-based model combining social media and ticketing data to predict event hype levels and attendance.
Ge, M., Ricci, F., Massimo, D. [2]	Health-Aware Food Recommendation System	2022	ACM RecSys Conference	Designed a hybrid recommendation model integrating content-based filtering with health-aware constraints, balancing taste and nutritional requirements.

Limitations of existing systems

- **Lack of real-time event prediction** capabilities.
- **Ticketing platforms** only track sales trends — cannot forecast early interest.
- **Social media tools** focus on engagement metrics but fail to ensure data authenticity.
- **Analytics platforms** provide generalized popularity insights without integration..
- **Limited reliability** due to overreliance on single data sources.

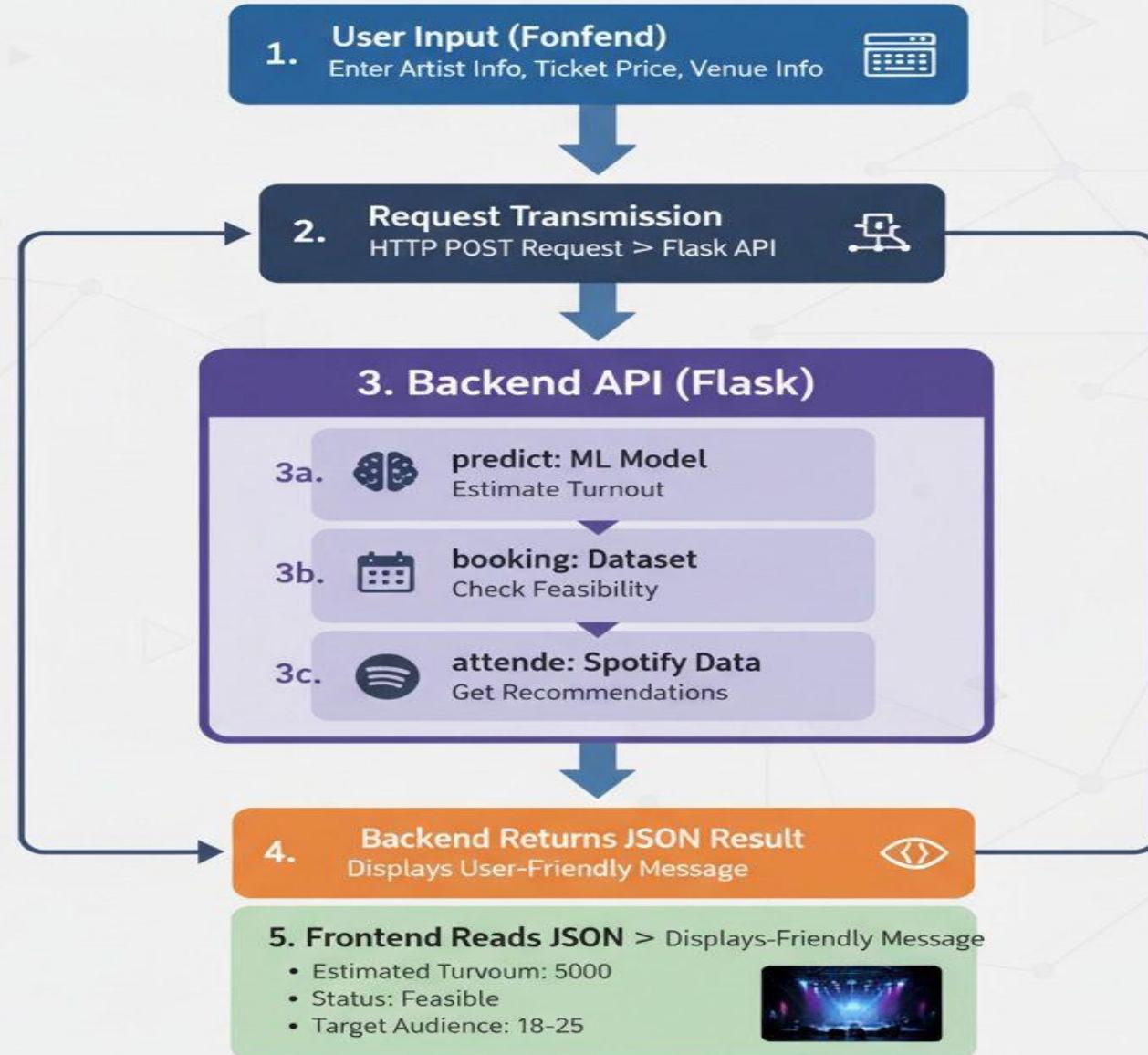
Problem statement

Organizers and attendees lack a reliable, real-time way to predict event popularity before and during sales. Fragmented signals (ticketing, social buzz, search trends, context) make demand planning, safety, and budgeting uncertain.

Solution

Hype Cast leverages **AI, NLP, and time-series models** to analyze multi-source signals (social media buzz, ticketing data, and location context). The system generates a **Hype Score** that predicts event turnout and popularity, enabling organizers to make data-driven decisions in real time.

System Design



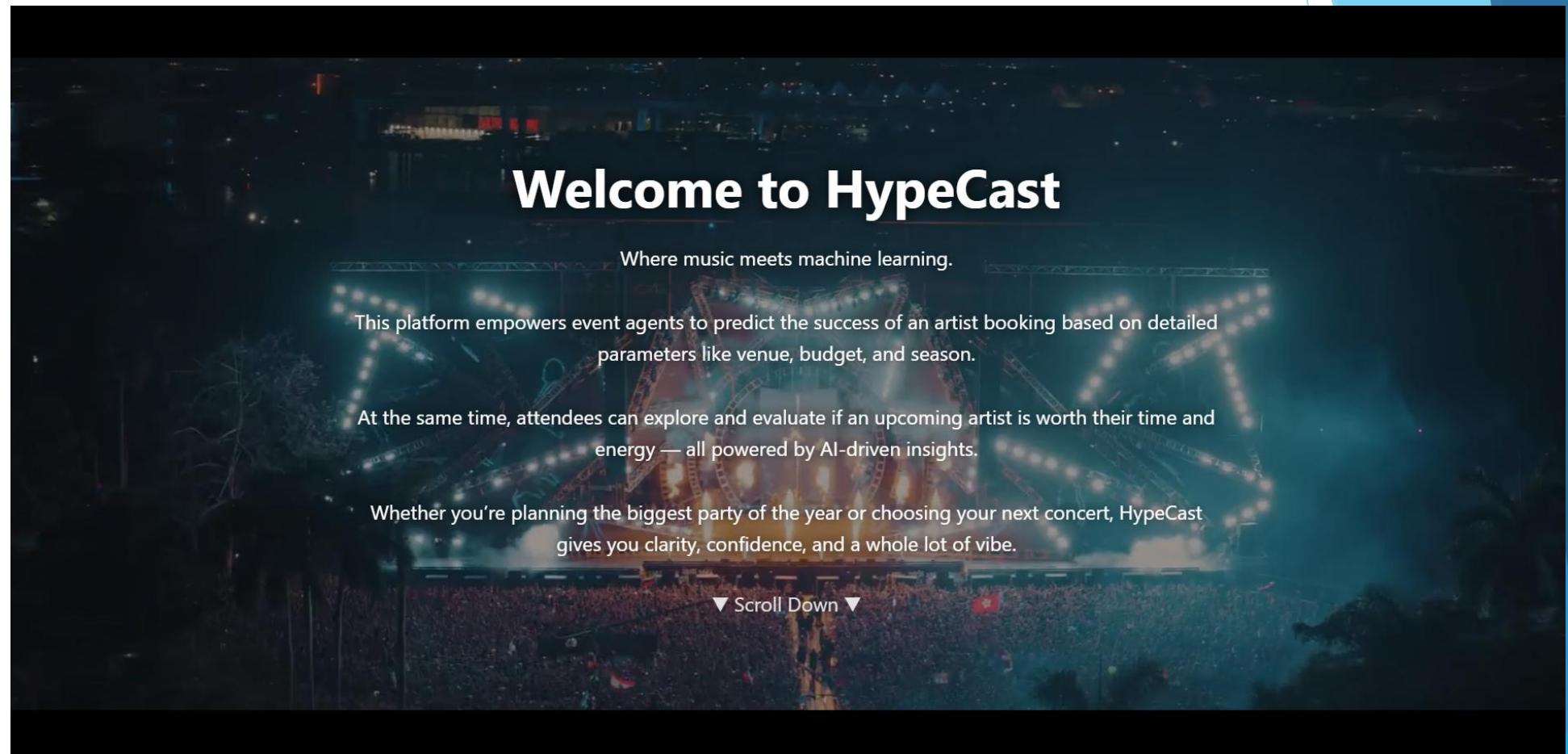
Technologies and methodologies

- **Frontend:**
 1. HTML → Structure
 2. CSS → Styling (modern neon UI)
 3. JavaScript → Input validation, interactivity, API handling
- **Backend:** Flask (Python microframework) with REST APIs (/predict, /booking, /attendee)
- **Machine Learning:** scikit-learn for regression and forecasting models
- **Data Tools:** pandas, numpy for preprocessing; pickle for model storage (artist_model.pkl)

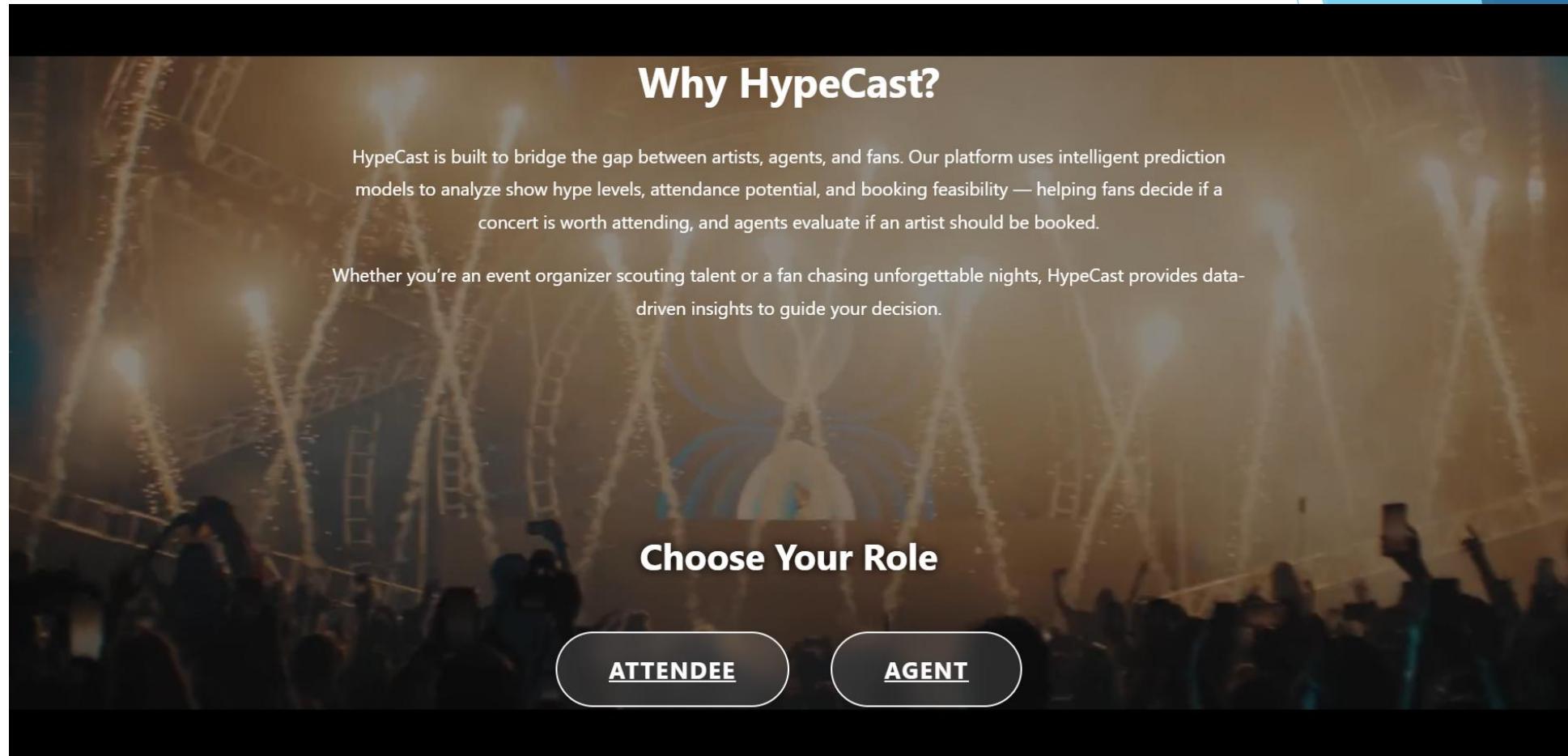
Methodology:

- **Data Collection:** Artist dataset with features like followers, ticket prices, past turnouts, costs, and Spotify streams.
- **Model Training:** Regression model developed in model.ipynb and saved as artist_model.pkl.
- **Integration:** Flask backend loads the model and serves predictions through REST APIs.
- **Prediction Process:** Inputs such as artist data
- → Model → Predicted turnout and Hype Score.
- **User Interaction:** Attendees view predicted event popularity, while organizers use AI insights for planning and booking decisions.

Implementation



Implementation



Why HypeCast?

HypeCast is built to bridge the gap between artists, agents, and fans. Our platform uses intelligent prediction models to analyze show hype levels, attendance potential, and booking feasibility — helping fans decide if a concert is worth attending, and agents evaluate if an artist should be booked.

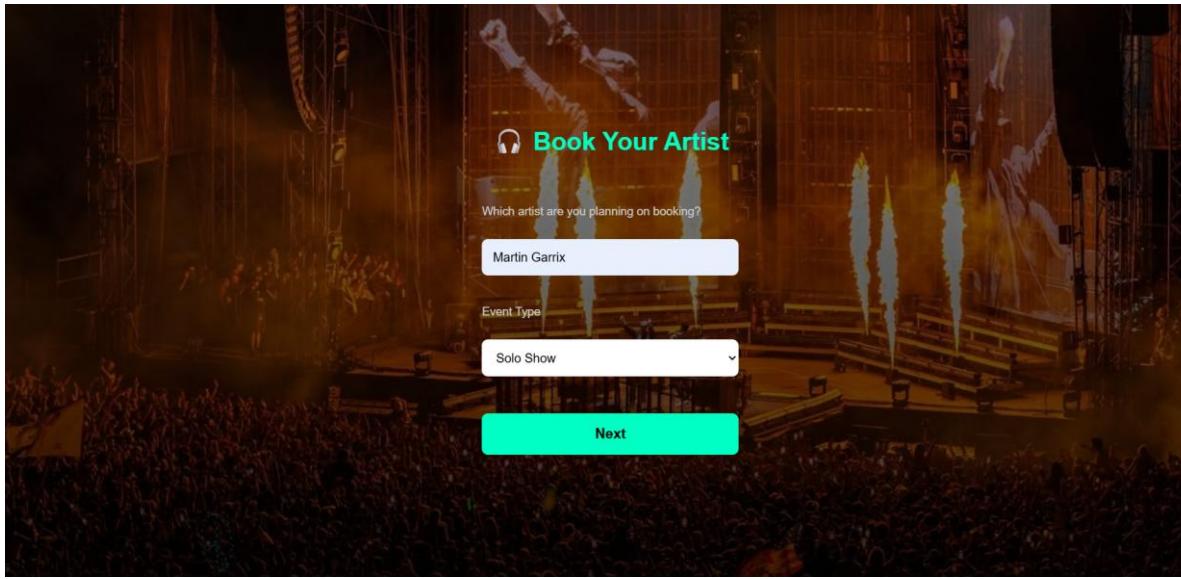
Whether you're an event organizer scouting talent or a fan chasing unforgettable nights, HypeCast provides data-driven insights to guide your decision.

Choose Your Role

[ATTENDEE](#)

[AGENT](#)

Implementation



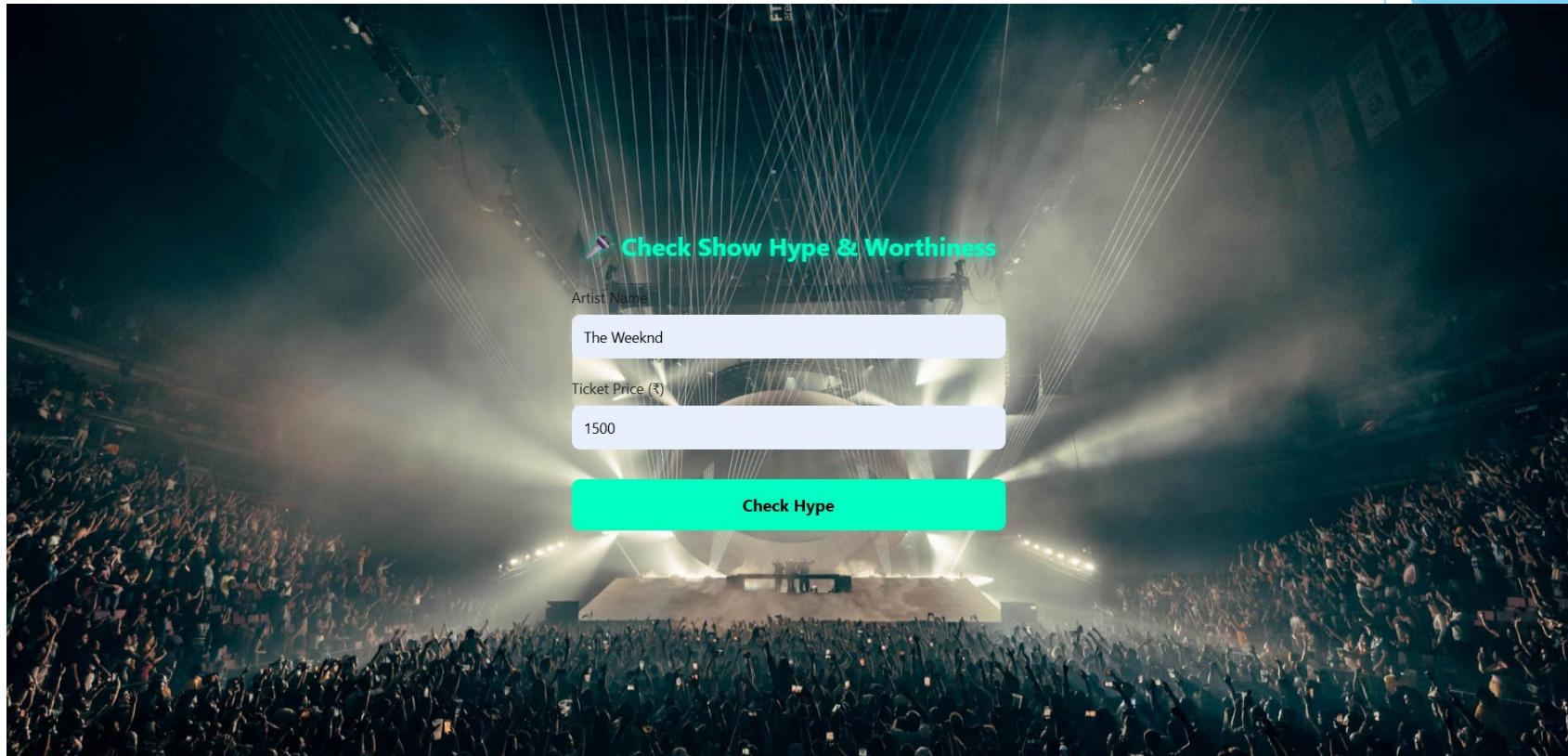
A screenshot of a web application interface for venue booking. The background is a photograph of a concert stage. The form fields include:

- City: Mumbai
- Venue: DY PATIL
- Capacity: 55000
- Preferred Season/Month: March
- Ticket Price (₹): 2500
- Genre: EDM

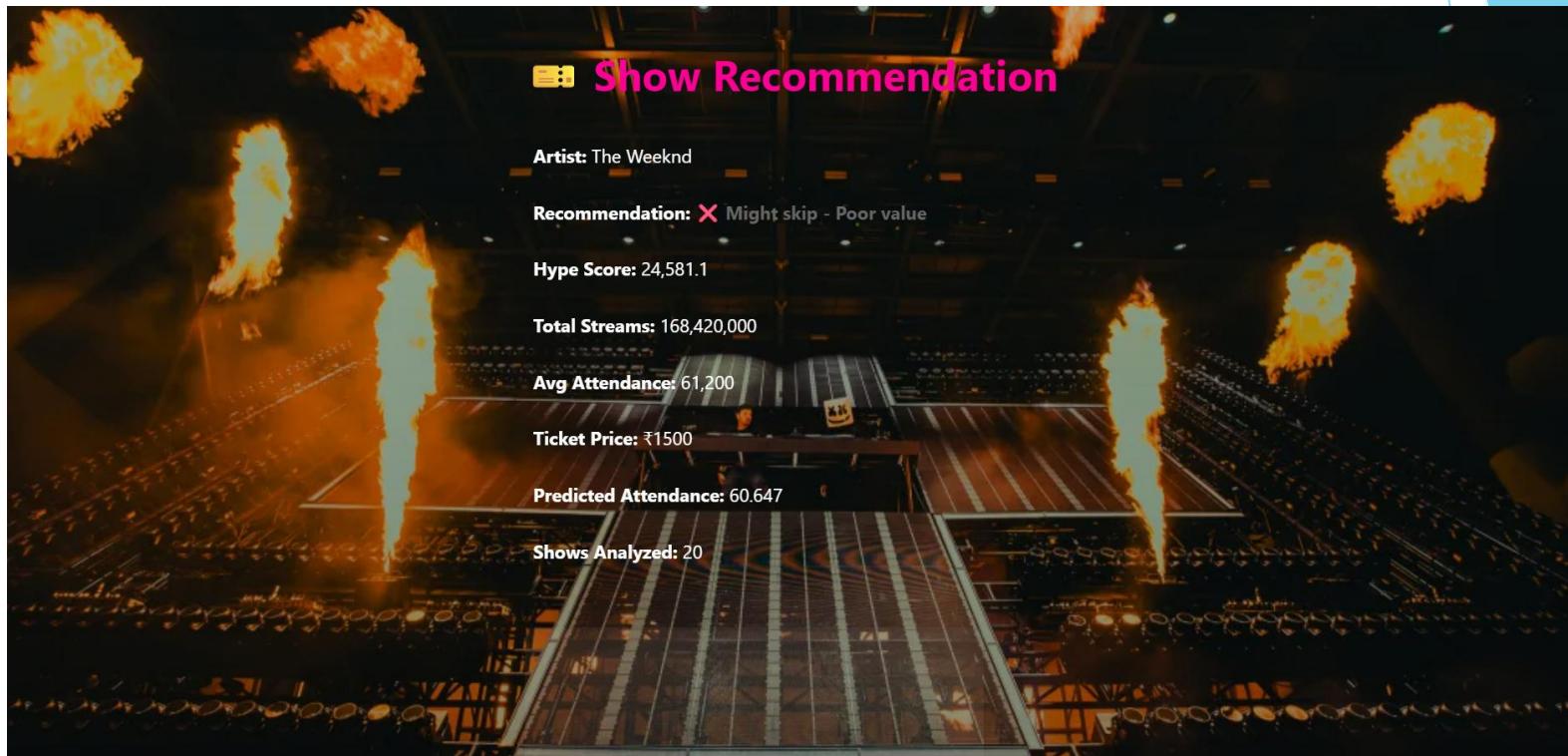
Implementation



Implementation



Implementation



Conclusion

- Hype Cast achieved its goal of delivering accurate event popularity forecasting.
- Integrated ticketing, social media, and demographic data into a unified, scalable system.
- Features like Hype Scores, explainable predictions, and scenario simulation enhance decision-making.
- A data-driven platform empowering organizers and attendees with smarter event insights.

References

- [1] Devlin, J., Chang, M.-W., Lee, K., & Toutanova, K. (2019). *BERT: Pre-training of Deep Bidirectional Transformers for Language Understanding*. arXiv:1810.04805
<https://arxiv.org/abs/1810.04805>
- [2] Taylor, S. J., & Letham, B. (2018). *Forecasting at Scale. The American Statistician*.
<https://doi.org/10.1080/00031305.2017.1380080>
- [3] Chen, T., & Guestrin, C. (2016). *XGBoost: A Scalable Tree Boosting System*. Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining.
<https://doi.org/10.1145/2939672.2939785>
- [4] Facebook. (2023). *Prophet: Forecasting at Scale*.
<https://facebook.github.io/prophet/>
- [5] FastAPI Documentation. (2023). <https://fastapi.tiangolo.com/>

Thank You...!!