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EVENTHIVE EVENT MANAGEMENT PLATFORM

Mrs. I.A Jannathu Firthous [1],Hemanth S[2], Kathiravan B[3], Aravind K [4]

Department Of Information Technology – 3rd Year
Sri Shakthi Institute of Engineering and Technology An Autonomous Institution
Coimbatore 641062.

ABSTRACT :

EventHive – Gamify, Connect & Experience is a dynamic event management platform designed to transform traditional events into engaging, interactive experiences through the power of gamification and AI-enhanced personalization. The platform caters to a wide range of events conferences, seminars, trade shows, and festivals—offering tools that drive attendee engagement, boost networking opportunities, and deliver immersive participation. EventHive enables organizers to create real-time challenges, interactive games, and social activities that enhance the event atmosphere and encourage active involvement. Integrated with AI, the platform intelligently analyzes user behavior and booking history to provide personalized event suggestions, tailored itineraries, and networking opportunities. Participants can earn rewards, badges, and points for completing tasks or referring others, further enhancing motivation and interaction. EventHive also supports live Q&A sessions, polls, and feedback collection to ensure continuous improvement and audience satisfaction. With a unified interface for both event organizers and attendees, EventHive simplifies the end-to-end event lifecycle from creation and promotion to engagement and analysis making it the ideal solution for hosting next-generation events that are social, smart, and unforgettable.

CHAPTER 1 INTRODUCTION

OVERVIEW

EventHive – Gamify, Connect & Experience is a modern, full-stack event management platform engineered to enhance attendee engagement, simplify event logistics, and personalize user experiences through a blend of gamification and artificial intelligence. In a digital-first era where experiences matter, EventHive empowers organizers and participants to create and enjoy events that are interactive, rewarding, and socially immersive.

With its Next.js-powered responsive and high-performance user interface, MongoDB-powered scalable data management, Stripe-powered safe and easy payment processing, and UploadThing-powered media and file storage, EventHive provides a powerful and integrated solution for handling the full event lifecycle. Every touchpoint is consolidated into a single, user-friendly Web-based system via the platform, from registration and tickets to live participation and post-event statistics.

The platform also incorporates AI-driven recommendations that analyze user behavior, preferences, and previous bookings to suggest relevant upcoming events, sessions, or people to connect with—enhancing personalization and increasing satisfaction. Attendees benefit from feat ures such as dynamic event schedules, smart matchmaking for networking, downloadable resources, and live Q&A tools.

With built-in Stripe integration, EventHive supports flexible payment models for ticketed events, premium content access, and donation-based participation. Meanwhile, its modular architecture includes core components like Event Dashboard, User Profile, Ticket & Booking Manager, Activity Tracker, and Feedback Analytics, making it highly customizable for events of any size or type.

EventHive is a next-generation solution that streamlines event planning, enriches user engagement, and delivers a memorable and measurable experience for both organizers and participants.

GENERAL INSTRUCTION

The development and deployment of EventHive begin with the construction of a scalable full-stack architecture using Next.js for the frontend, MongoDB for backend data storage, Stripe for secure payment processing, and UploadThing for file and media handling. The application is designed to offer a responsive and seamless user experience, optimized for modern web standards and compatible across all major browsers and devices. The platform's frontend dynamically interacts with the backend and third-party APIs, enabling real-time updates, user authentication, booking confirmations, and payment processing. AI-enhanced modules analyze user interactions and booking patterns to deliver personalized event recommendations and networking suggestions, adding an intelligent layer to the user journey. Gamification features are embedded throughout the event experience, including challenges, badge collection, and reward points, all tracked via an internal activity system that boosts engagement and encourages interaction. The system has been thoroughly tested to ensure consistency in data handling, payment flows, and file uploads, along with robust performance under varying user loads. EventHive empowers organizers and attendees alike by removing technical barriers, automating core operations, and enriching the overall event experience with interactive and intelligent features.

EventHive implements various functional modules:

- Allows organizers to create, manage, and monitor events with tools for analytics and participant engagement
- AI-Powered Recommendations: Provides personalized suggestions for events, sessions, and networking opportunities.
- Feedback & Polling System: Collects live feedback, conducts polls, and analyzes responses to enhance event quality.
- Gamification Engine: Integrates real-time challenges, rewards, and leaderboards to enhance attendee interaction.

CHAPTER 2 LITERATURE REVIEW

- *S. Bhatt, P. K. Manadhata and L. Zomlot,* "The Operational Role of Security Information and Event Management Systems," in IEEE Security & Privacy, vol. 12, no. 5, pp. 35-41, Sept.-Oct. 2014, doi: 10.1109/MSP.2014.103. Abstract: An integral part of an enterprise computer security incident response team (CSIRT), the security operations center (SOC) is a centralized unit tasked with real-time monitoring and identification of security incidents. Security information and event management (SIEM) systems are an important tool used in SOCs; they collect security events from many diverse sources in enterprise networks, normalize the events to a common format, store the normalized events for forensic analysis, and correlate the events to identify malicious activities in real time.
- *Pinjari, Khalil, and Khan Nur:* Now a day's, the events such as festivals, wedding etc. have become a core part of life which has resulted in event planning and Management Company to rise. With the customers and events increasing at larger rate, it is difficult to manage using traditional system using spreadsheets, traditional database and more. In order to overcome the drawbacks of traditional Event Managing System, a new Smart Event Management System has been introduced which uses the modern technology of .Net Framework for managing various tasks and planning for employees, customer, location, transport and more. With the help of this technology, the distance between customer and management team has reduced with the Smart Web access.
- *Thomas, O., Hermes, B., & Loos, P. (2008)* Events are becoming more and more important for companies as an instrument of marketing communication. The management of events is an interdisciplinary task, addressed in the most diverse fields in practice and in research establishments. Because careful preliminary planning and precise execution are extremely important for events, modeling languages, such as the event-driven process chain (EPC), can contribute greatly to the systematic design of event management systems. Accordingly, this article will make recommendations for an application system and organization design in the form of an EPC reference process model for event management.

CHAPTER 3

RESEARCH METHODOLOGIES

EXISTING SYSTEMS

Eventbrite:

Users can design, advertise, and oversee events of all sizes with Eventbrite, a centralized ticketing and event management platform. Through interfaces with email marketing providers and social media, it provides capabilities for event listing, ticket sales, tracking attendees, and promotional activities. Despite being widely used, Eventbrite functions as a conventional SaaS (Software-as-a-Service) platform with little room for customization and no built-in support for AI-powered personalization or gamification. Furthermore, user interaction is restricted to RSVP and simple feedback systems, and payment options are restricted to conventional processors.

Meetup:

Meetup is a platform primarily focused on bringing people together through interest-based events and communities. It allows organizers to schedule meetups and build member networks around shared hobbies, professions, or causes. However, Meetup lacks extensive event management capabilities like real-time engagement tracking, gamification elements, and integrated payment gateways. The absence of advanced features such as dynamic event analytics or AI-driven recommendations makes it less suitable for large-scale or interactive professional events.

Whova:

Whova is an event management app that offers comprehensive solutions for conferences and corporate events, including attendee registration, agenda planning, speaker management, and engagement tools like polling and Q&A. It provides a mobile-friendly interface and supports sponsor visibility. However, its functionalities are often locked behind premium plans, and user interaction remains primarily informational rather than experiential. Features like gamified participation and intelligent content recommendations are limited, making it less adaptive for creating immersive and highly interactive event environments.

PROPOSED SYSTEM

EventHive is a modern, AI-powered event management system developed to revolutionize the way events are created, experienced, and managed. The platform is designed using a scalable and robust tech stack, including Next.js for the frontend, MongoDB for database operations, Stripe for payment integration, and UploadThing for media storage. It offers a unified, user-friendly interface for both event organizers and attendees, simplifying processes such as event creation, ticket booking, file sharing, and real-time audience engagement. The platform supports a variety of event types conferences, expos, seminars, workshops, and festivals making it a versatile tool for the modern event landscape.

A standout feature of EventHive is its gamification engine, which transforms traditional, passive event participation into an engaging, interactive experience. Organizers can incorporate real-time challenges, live polls, quizzes, and point-based systems to encourage attendee involvement. Attendees

earn badges, climb leaderboards, and unlock achievements as they interact with the event, fostering competition and deeper engagement. These game-like elements are integrated seamlessly within the event flow, ensuring that user participation feels natural, rewarding, and entertaining.

To further enhance personalization, EventHive includes AI-driven features that track user preferences and booking history to deliver intelligent recommendations for future events, sessions, or networking opportunities. For instance, if a user frequently attends design-related sessions, the system can proactively suggest similar events or workshops and highlight relevant speakers or sponsors. This personalization engine not only boosts user satisfaction but also increases retention and participation rates for recurring events.

Security, scalability, and performance are central to EventHive's architecture. All transactions, including ticket purchases and donations, are securely processed through Stripe, ensuring financial transparency and compliance. UploadThing enables event organizers to upload and manage brochures, speaker slides, or promotional materials, which attendees can access directly through the platform. The system's modular design allows for future enhancements, such as virtual event streaming, sponsor dashboards, and post-event analytics. EventHive aims to bridge the gap between physical and digital events, offering a comprehensive solution tailored for a connected, experience-driven audience.

ADVANTAGES

End-to-End Event Management:

EventHive provides a unified platform for organizers to manage the entire lifecycle of an event—from creation and promotion to ticketing, attendee engagement, and post-event analytics. This all-in-one approach reduces reliance on multiple tools and platforms, streamlining operations.

Gamified User Engagement:

With built-in gamification features like badges, leaderboards, and point systems, EventHive boosts attendee participation and retention. Users are rewarded for attending sessions, answering polls, and engaging with event content, making events more interactive and memorable.

Secure and Scalable Infrastructure:

Backed by Stripe for secure transactions and MongoDB for efficient data handling, EventHive ensures robust performance during high-traffic scenarios. UploadThing allows seamless storage and access to media files, enabling organizers to share resources with attendees effortlessly.

AI-Powered Personalization:

The platform uses intelligent recommendation systems to suggest events, sessions, or speakers based on user behavior and interests, enhancing the overall attendee experience and helping organizers improve event targeting.

Modern and Responsive UI:

Built using Next.js and React, EventHive offers a clean, mobile-friendly interface that supports smooth navigation and real-time updates. Whether users are booking tickets, uploading resources, or checking schedules, the UI ensures a seamless and intuitive experience across devices.

CHAPTER 4

SYSTEM REQUIREMENTS

HARDWARE SPECIFICATIONS

- **Processor:** Intel Core i5 or higher
- **RAM:** 8GB or more
- **Operating System:** Windows 11 / macOS / Linux (cross-platform compatibility)

SOFTWARE SPECIFICATIONS

Frontend Development

- HTML5, CSS3, JavaScript – Core web technologies
- React.js – Component-based UI development
- Next.js – Server-side rendering, routing, and performance optimization
- Tailwind CSS – Utility-first CSS framework for responsive styling

Backend Development

- **Node.js –** JavaScript runtime for handling server-side operations
- **Express.js (optional) –** Middleware and routing (if used outside Next.js API routes)
- **MongoDB –** NoSQL database for scalable data storage
- **Mongoose –** ODM for managing MongoDB operations

Payment Integration

- **Stripe** – Secure and flexible payment processing

- **react-stripe-js / @stripe/stripe-js** – Frontend Stripe SDKs

Media & File Storage

- **UploadThing** – Simple file uploads with React integration

AI & Personalization

- **Custom Recommendation Engine** – Analyzes user behavior and preferences
- **AI-based Matchmaking** – For networking and attendee engagement
- **Live Q&A System** – Enhances user interaction

Notifications

- **react-hot-toast** – Real-time toast messages for actions and events

Deployment & CI/CD

- **Vercel** – Optimized hosting for Next.js apps with CI/CD pipelines
- **Git & GitHub** – Version control and collaboration
- **Infura / Alchemy** – Web3 APIs for Ethereum node access and RPC handling

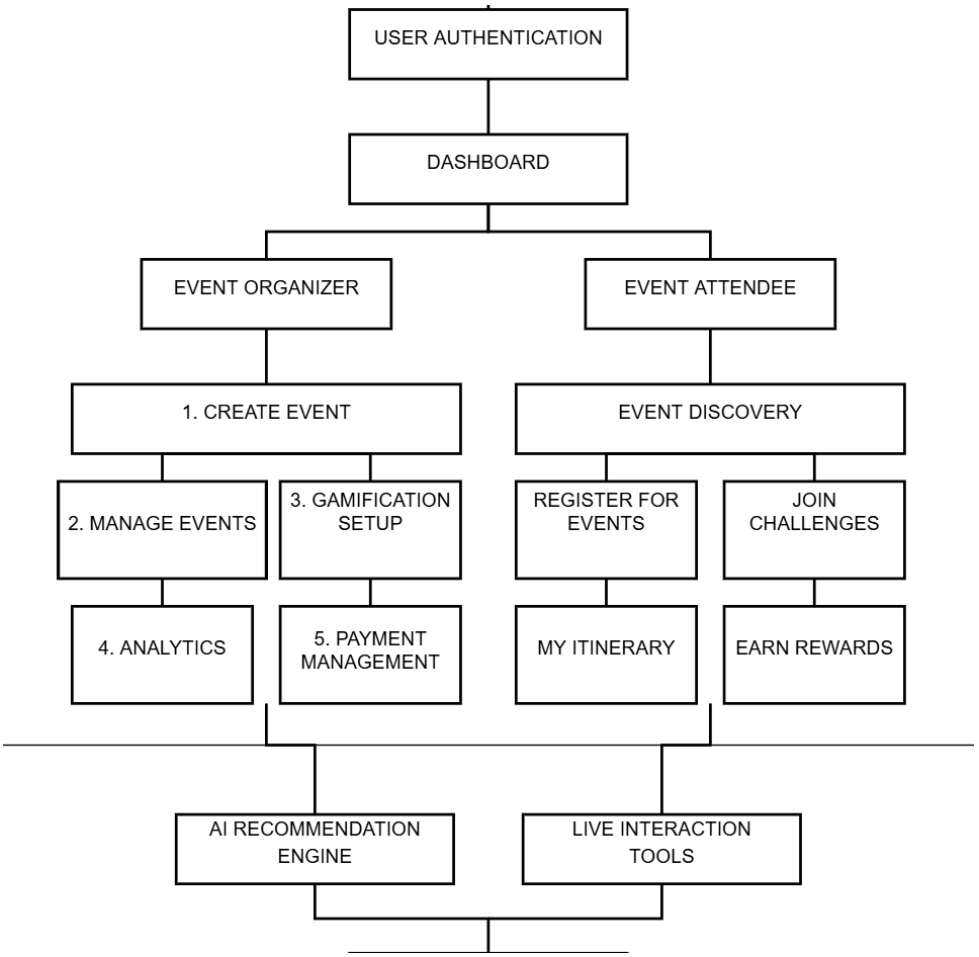
Development Tools

- **Visual Studio Code** – Primary code editor
- **Postman** – API testing tool
- **Browser Developer Tools** – For debugging and UI testing

CHAPTER 5

SYSTEM ARCHITECTURE

BLOCK DIAGRAM



IMPLEMENTATION

LANDING PAGE

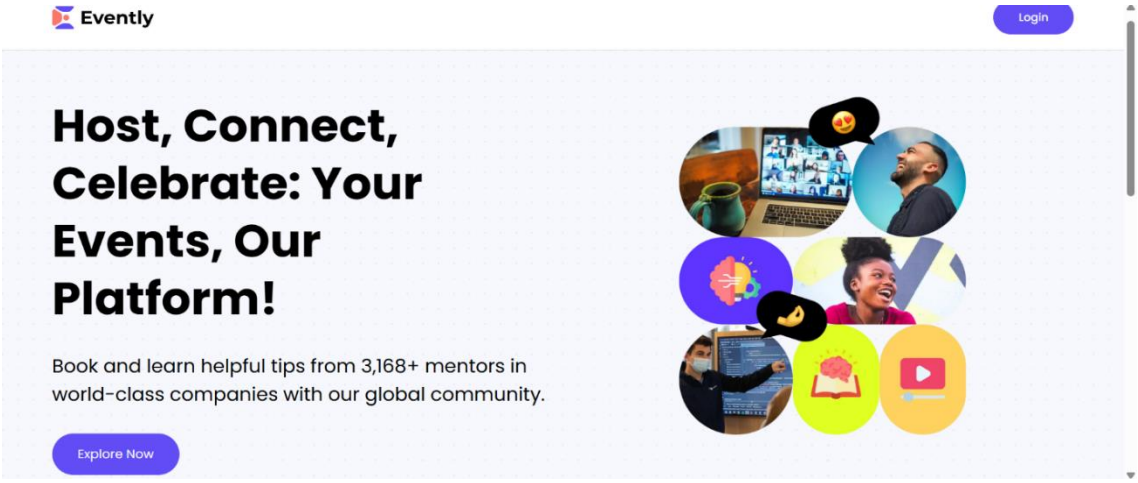


Figure 1.1 Landing Page

EVENT PAGE

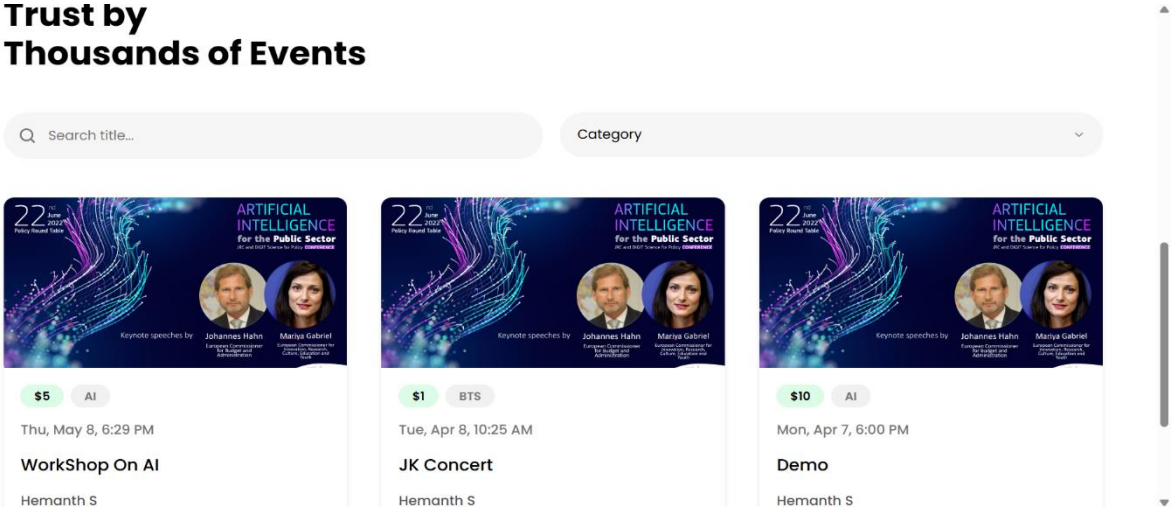
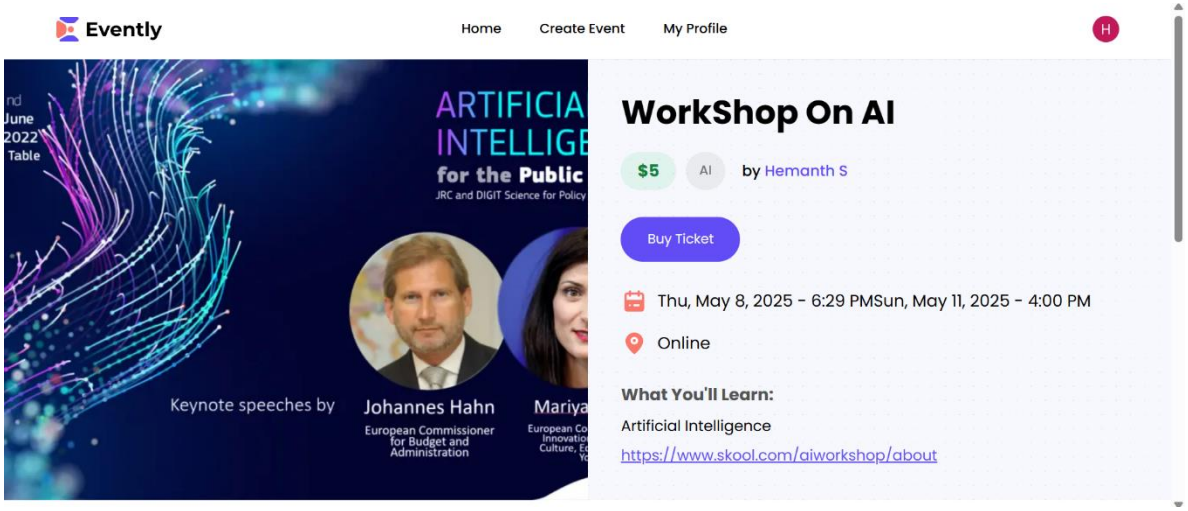


Figure 1.2 Event Page

EVENT BOOKING PAGE

Figure 1.3 Event Booking Page



STRIPE PAYMENT PAGE

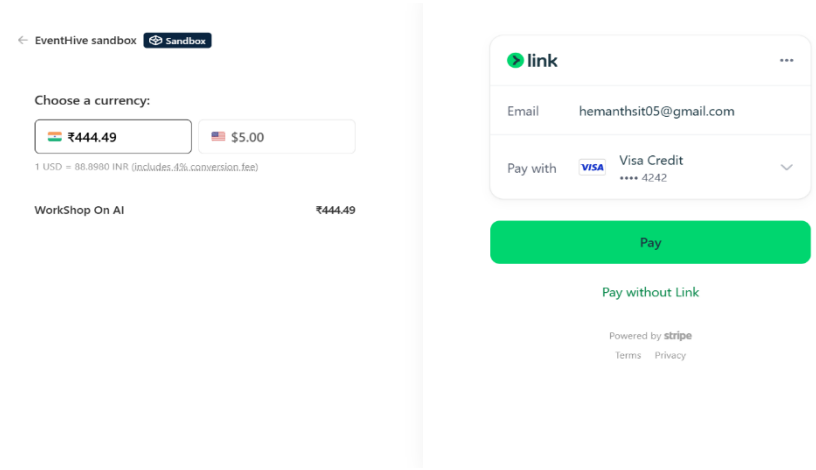


Figure 1.4 Stripe Payment Page

CONFIRMED EVENT PAGE

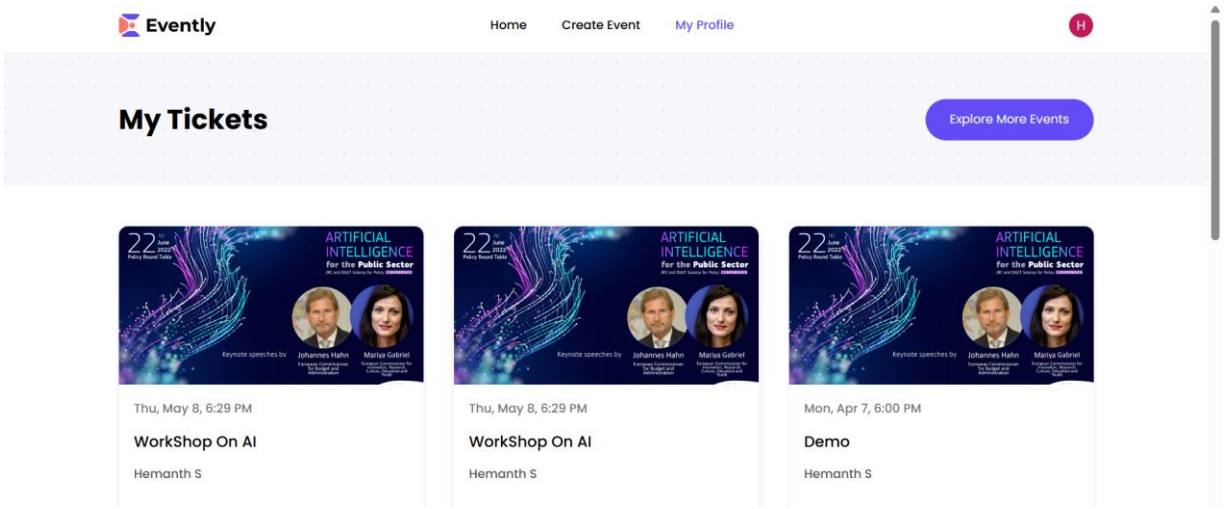


Figure 1.5 Booking Confirmed Page

CHAPTER 6 APPLICATIONS

1. *Streamlines virtual and hybrid event management* by offering a unified platform for event creation, registration, scheduling, and real-time attendee engagement.
2. *Enhances attendee experience* through personalized event recommendations, AI-based matchmaking, and gamified interactions that increase participation and satisfaction.
3. *Facilitates seamless networking* by enabling smart attendee connections based on shared interests, demographics, and past event behaviors using intelligent algorithms.
4. *Supports organizers with data-driven insights* via advanced analytics dashboards to monitor registrations, engagement, feedback, and ROI metrics in real-time.
5. *Simplifies ticketing and payments* through secure Stripe integration, with support for tiered pricing, coupon codes, and real-time transaction tracking.

CHAPTER 7 CONCLUSION AND FUTURE WORK

CONCLUSION

EventHive redefines the event management landscape by combining modern web technologies with gamification and AI-driven personalization. Through seamless integrations with tools like MetaMask, Stripe, and UploadThing, it offers a secure, scalable, and interactive platform for both organizers and attendees. With features such as smart matchmaking, real-time engagement, dynamic scheduling, and data-driven analytics, EventHive not only simplifies event logistics but also maximizes user experience and participation. It stands as a next-generation solution for hosting impactful, immersive, and intelligent events in a digital-first world.

FUTURE WORKS

Future development of EventHive will focus on integrating AI-driven sentiment analysis, enhancing mobile accessibility, and expanding support for AR/VR-based immersive event experiences. Plans also include multi-language support, calendar integrations, and advanced analytics for improved user engagement and event planning.

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