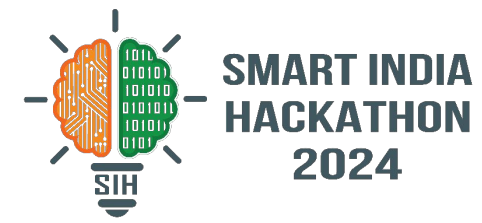
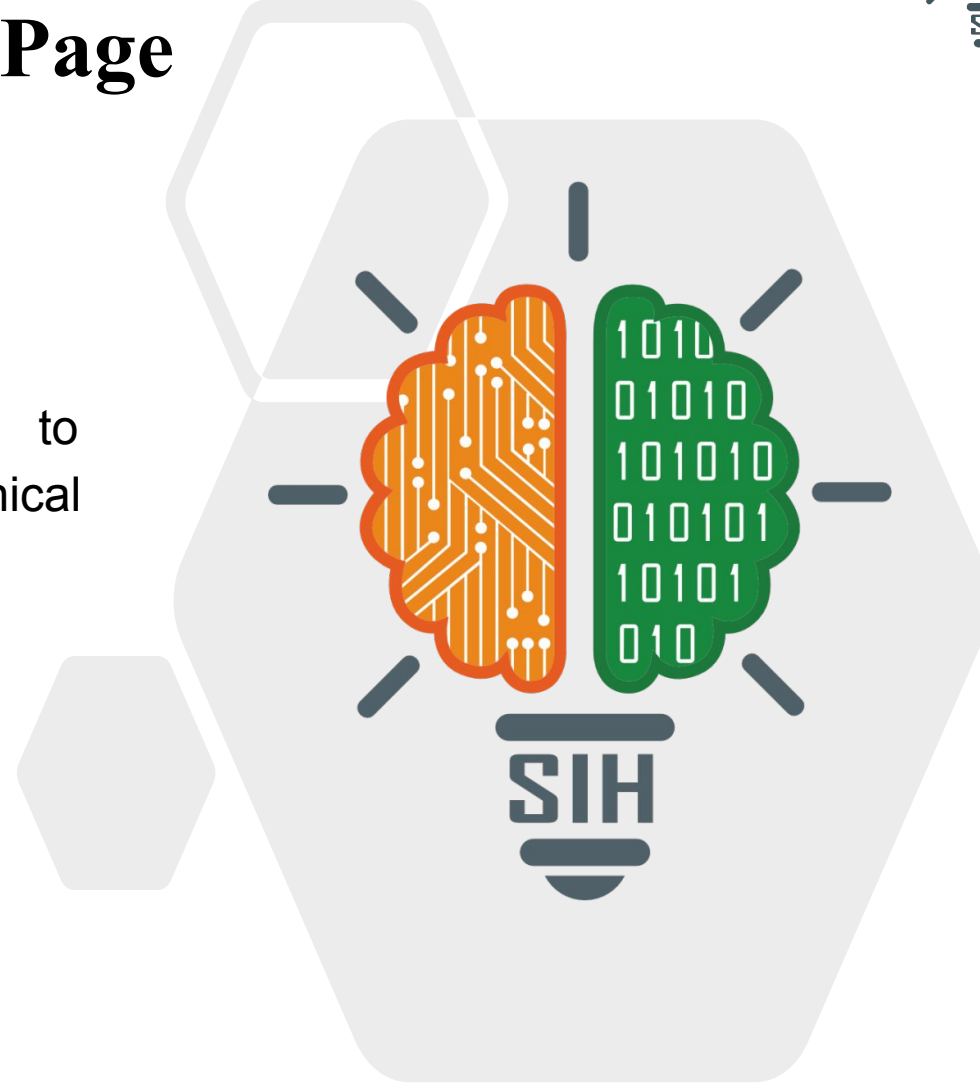


# SMART INDIA HACKATHON 2024



## Title Page

- **Problem Statement ID – 1633**
- **Problem Statement Title-** Intelligent platform to Interconnect Alumni and Student for Technical Education Department, Govt. of Rajasthan
- **Theme-** Smart Education
- **PS Category-** Software
- **Team ID-**
- **Team Name (Registered on portal)**



# MentorWave

## ◆ Proposed Solution

### Centralized Alumni Database

#### Solution:

Create a **centralized database** to store and update alumni information, including contact details, career progress, and areas of expertise.

#### How to Implement:

- Develop a **web-based database system** accessible to both alumni and students.
- Utilize **AI algorithms** to automate data updating and verification processes.
- Integrate **data collection forms** where alumni can regularly update their information.
- Implement a **search function** so students can easily find alumni based on career, specialization, or location.

### Structured Alumni-Student Interaction

#### Solution:

Create an **online platform** where students and alumni can interact meaningfully, through discussions, mentorship, and career guidance. This platform will structure communication in a way that maximizes engagement and learning opportunities.

#### How to Implement:

- Build an **interactive platform** that includes features like:
  - **Discussion boards** for topic-based conversations.
  - **Direct messaging** for personalized mentorship and one-on-one guidance.
- Include **matching algorithms** that pair students with alumni based on career aspirations and academic background.

### Career Guidance Programs

#### Solution:

Implement a structured **mentorship program** that facilitates career guidance. Alumni can offer valuable real-world insights and advice to help students navigate career choices and professional development.

#### How to Implement:

- Develop a **mentorship matching system** on the platform where students can request guidance from alumni in their field.
- Organize **career counseling sessions** and create an option for students to schedule meetings with alumni.

### Increase Alumni Engagement

#### Solution:

Encourage greater involvement from alumni through engaging activities and opportunities. This will help build stronger connections between the alumni, students, and the institution.

#### How to Implement:

- Create **automated invitation systems** that notify alumni about upcoming events, panels, and meetups.
- Establish **alumni recognition programs** that honor active members, such as featuring them in newsletters or awarding special honors.
- Offer **incentives** like access to exclusive networking events, mentorship opportunities, or participation in institutional boards.

### Build Supportive Networks

#### Solution:

Establish a robust **networking system** where alumni and students can connect based on shared industries, interests, or educational backgrounds. This will create a strong, supportive community.

#### How to Implement:

- Create **sub-groups or communities** within the platform, organized by industry, skill, or location.
- Allow users to **form project groups** for collaboration, mentorship, and professional development.
- Provide **job placement assistance** by allowing alumni to post job openings and offer advice on internships or career opportunities.

### Leverage AI Technologies

#### Solution:

Utilize **AI** to improve the platform's functionality and security. This will make it easier for students and alumni to connect while ensuring safety and data accuracy.

#### How to Implement:

- Use **AI-based matching algorithms** to recommend alumni for mentorship or networking based on student profiles and interests.
- Implement **NLP-based content moderation** to detect and remove inappropriate content from forums and discussions.
- Integrate **blockchain or secure verification technologies** to ensure all profiles are authenticated, preventing fake profiles or fraudulent activities.

### Implement AI-Powered Chatbots

#### Solution:

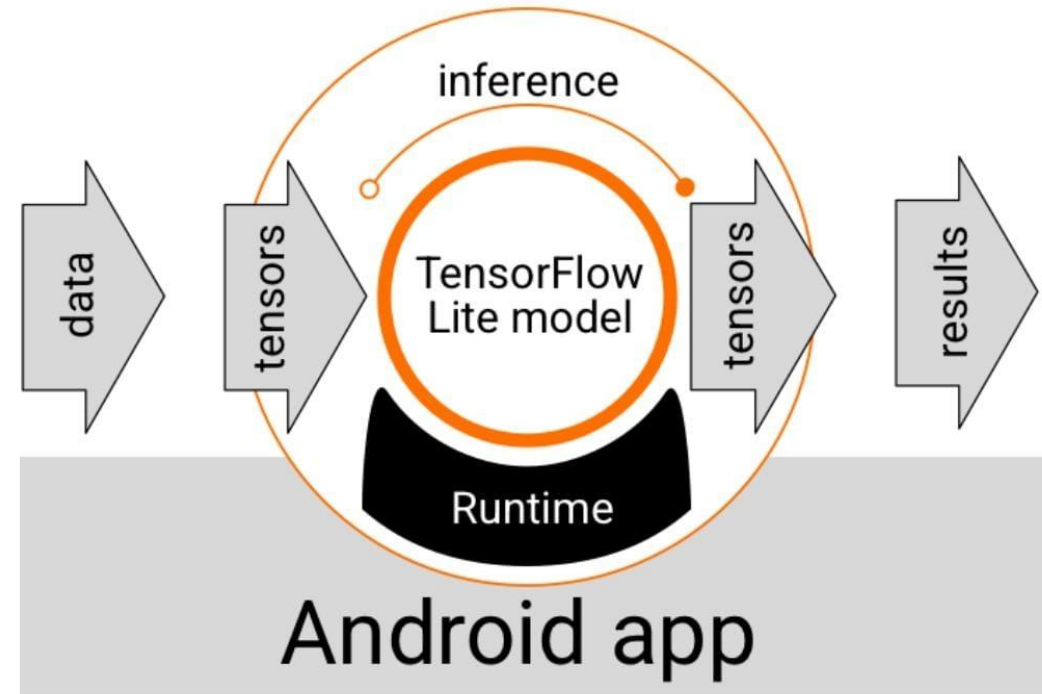
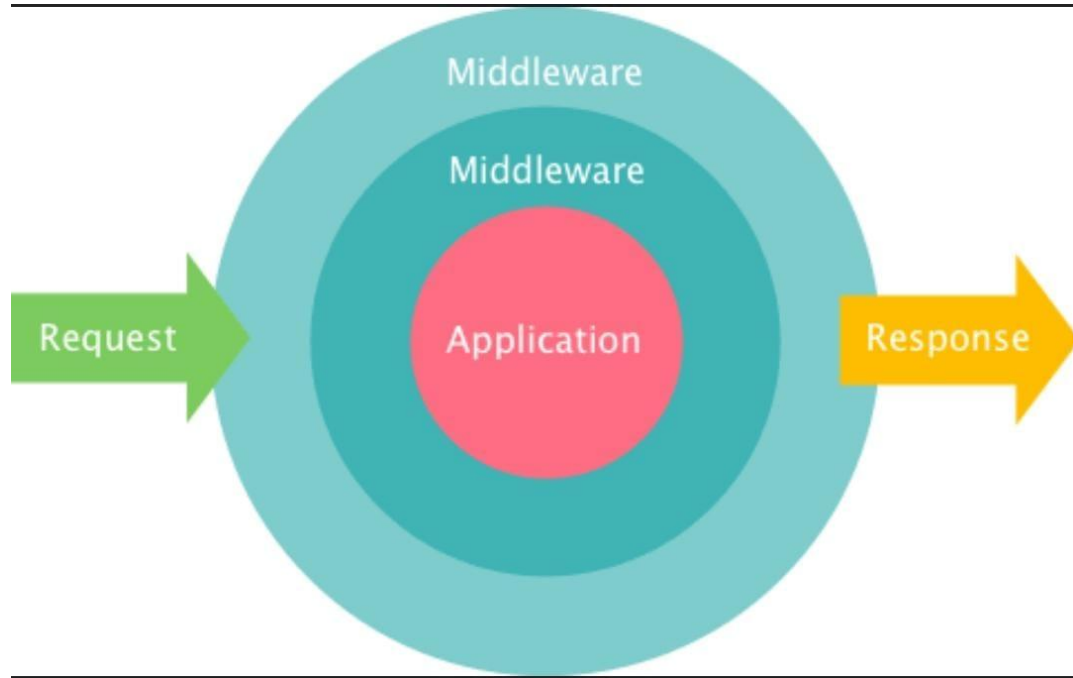
Use **AI chatbots** to offer students instant assistance with platform navigation, career guidance, and general queries, ensuring that users get the help they need 24/7.

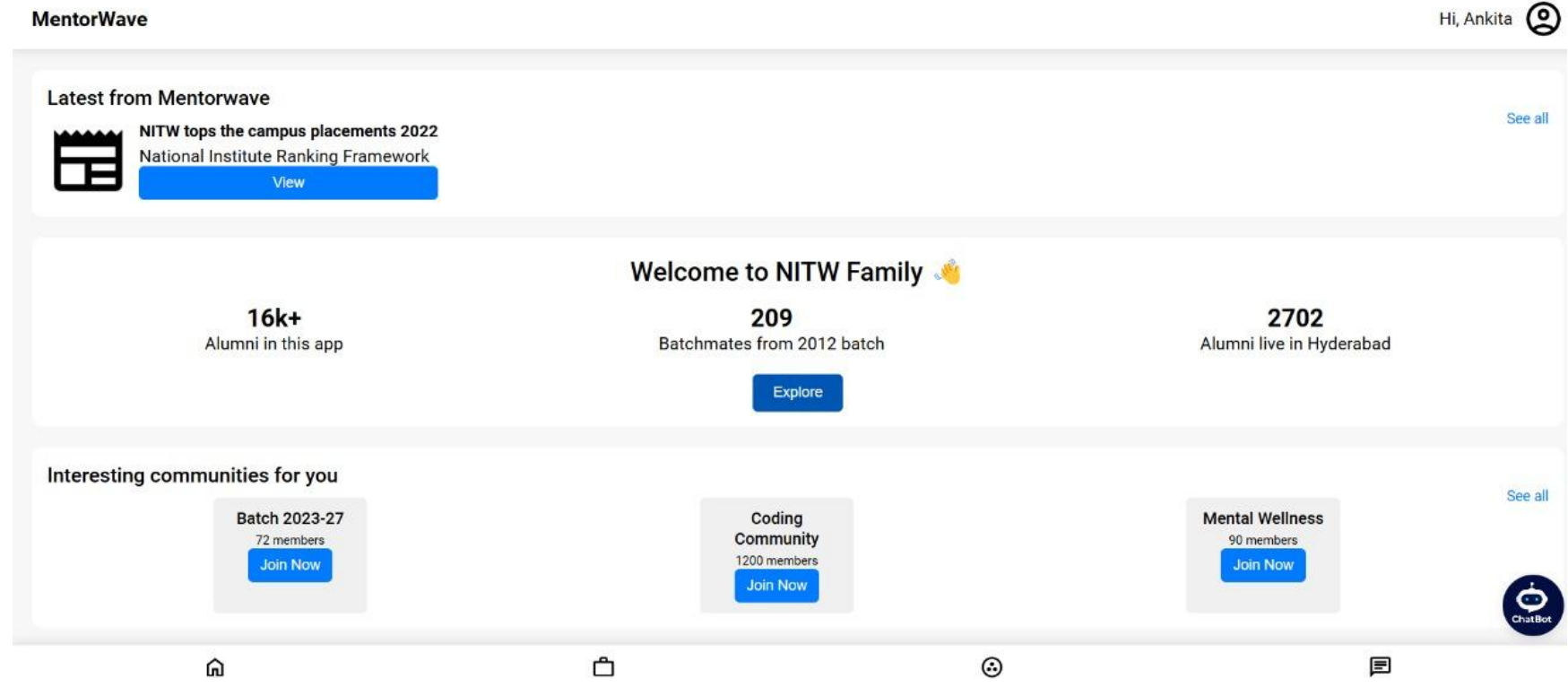
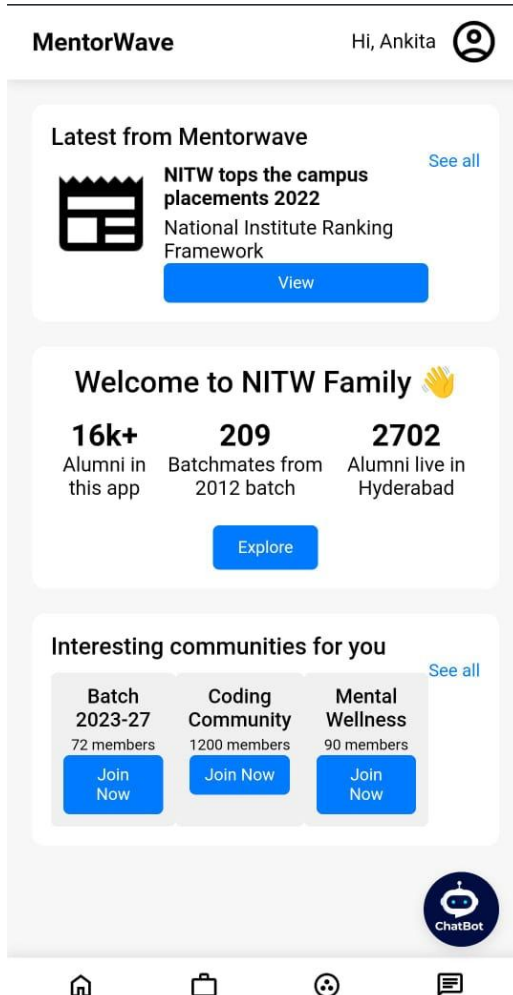
#### How to Implement:

- Develop **AI-driven chatbots** that can answer FAQs, provide personalized guidance, and suggest resources based on student profiles.
- Program the chatbot to offer **real-time support** for students trying to navigate the platform, book sessions, or interact with alumni.
- Continuously **update the chatbot** to improve its functionality based on user feedback and evolving needs.

- **Chatbot for 24/7 Help:**
  - Google Dialogflow: For handling general queries using NLP technology.
  - Google Cloud Natural Language API: For detecting and filtering content based on AI analysis.
- **Fake Profile Detection:**
  - TensorFlow: AI/ML library to build and deploy models that analyze data for spotting fake profiles based on learned patterns.
- **Contact Info Query:**
  - Node.js: For server-side processing of user data.
  - Python: For handling user queries and processing the data.
  - Firebase / MongoDB: For data storage and management.
- **Cloud-Based Email Delivery:**
  - SendGrid / Mailgun: Cloud-based services providing APIs for email delivery.
- **Discussion Forums/Community:**
  - React: For frontend UI development.
  - Firebase: For real-time data synchronization in forums.
- **Reward System:**
  - Cron Jobs: For periodically checking and removing points from alumni reward systems.
- **Feedback System:**
  - Google Analytics: For analyzing mentor performance through feedback data.
  - Filtering Algorithms: To rank feedback by ratings and integrate this analysis with the chatbot to suggest top-rated feedback.
- **Tracking and Logging:**
  - Middleware: Automated software for tracking and logging events or sessions.

# System Architecture



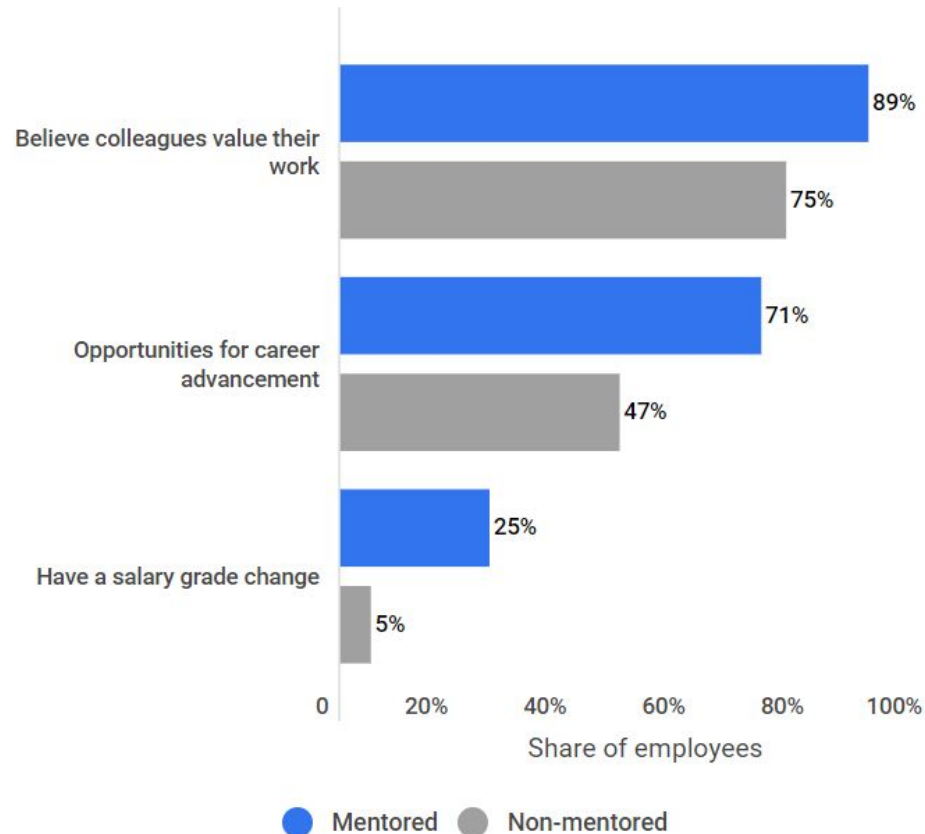


## Problems to tackle:

- making alumni and student to use the app/software
- constant engagement of users
- data privacy
- fraudulent activities

## Strategies to overcome the problems:

- 1) targeted outreach campaigns through colleges and alumni associations.
- 2) Use personalized notifications, regular content updates, and gamification (e.g., badges or rewards) to keep users active.
- 3) Implement strong encryption, secure login using blockchain.
- 4) providing master control to respective college admins to review.
- 5) Use AI-driven fraud detection, identity verification (e.g., college email validation), and report/block features. Monitor suspicious activity patterns closely.



- **68% of students** with mentors secured full-time jobs within six months of graduation, compared to only **45%** of students without mentors.
- **77% of students** in mentorship programs noted increased confidence in managing their own projects and people.
- Students with mentors are **55% more likely** to develop time management skills, and **45% more likely** to develop effective communication skills.

- <https://www.linkedin.com>
- [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7372684/#:~:text=In%20engineering%20and%20medical%20colleges,%25\)%20had%20very%20severe%20depression.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7372684/#:~:text=In%20engineering%20and%20medical%20colleges,%25)%20had%20very%20severe%20depression.)
- [https://www.researchgate.net/publication/367090752\\_The\\_Role\\_of\\_a\\_Mentor\\_in\\_Students'\\_Personal\\_Growth\\_Academic\\_Success\\_and\\_Professional\\_Development](https://www.researchgate.net/publication/367090752_The_Role_of_a_Mentor_in_Students'_Personal_Growth_Academic_Success_and_Professional_Development)
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