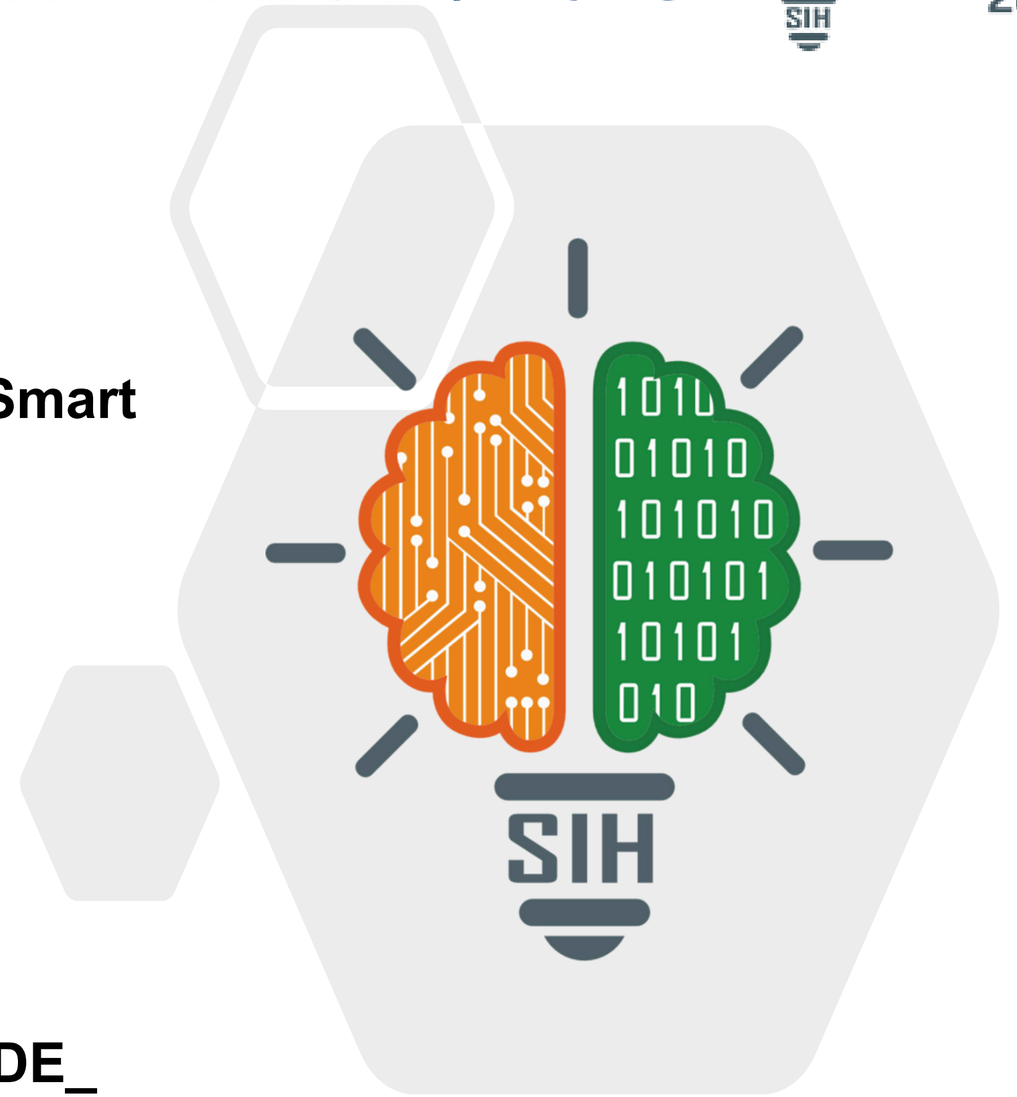
SMART INDIA HACKATHON 2025

AvsarX

- **Problem Statement ID – SIH25033**
- **Problem Statement Title - AI-Based Smart Allocation Engine for PM Internship Scheme**
- **Theme - Smart Automation**
- **PS Category - Software**
- **Team ID - 100638**
- **Team Name (Registered on portal) - _NULL NODE_**



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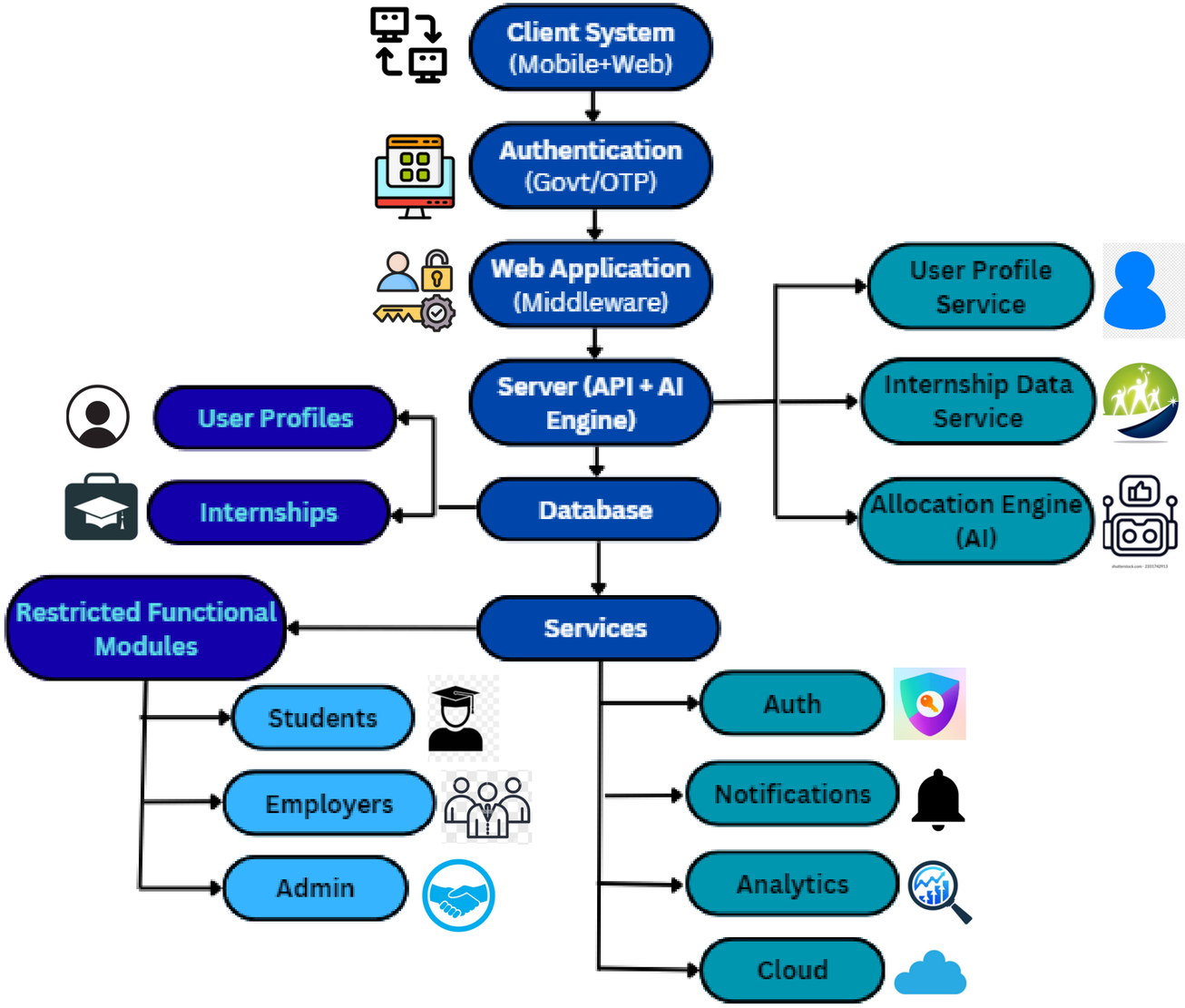
PROPOSED SOLUTION

- **Profile Creation:** Students create/upload a resume to extract a simple digital profile (skills, education, interests, preferred locations).
- **AI Matching Engine**: Matches candidate profiles with internship descriptions using **NLP + ML**.
- **Smart Filters:** Refine by location, category, or internship type.
- **Application tracking system:** Students can view applied internships and track progress/status.
- **Mobile-first lightweight design** for easy access in low-connectivity areas.
- Supports **students with low digital literacy** via resume upload and simplified guided steps.
- Reduces **application mismatches** by extracting accurate data from resumes.
- **Resume Parsing+AI Matching:** Auto-extraction of details is unique compared to manual-only portals.
- **End-to-End Process:** From **profile → matching and allocation → filters → application → tracking**, all in one system.
- Email notifications to every user for easy access and reminders.

System Architechture



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TECHNICAL APPROACH

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TECHNOLOGY STACK

Frontend: HTML, Tailwind CSS, Vanilla JS, JQuery, Bootstrap, Flexbox

Backend: Flask (Python)

Data: Scraped from PM Internship Website

ML model: TensorFlow (Model development), Scikit-learn (Preprocessing and evaluation), Hugging Face Transformers (NLP for resume parsing).

Database: Postgre SQL

Authentication: OAuth2.0, Firebase

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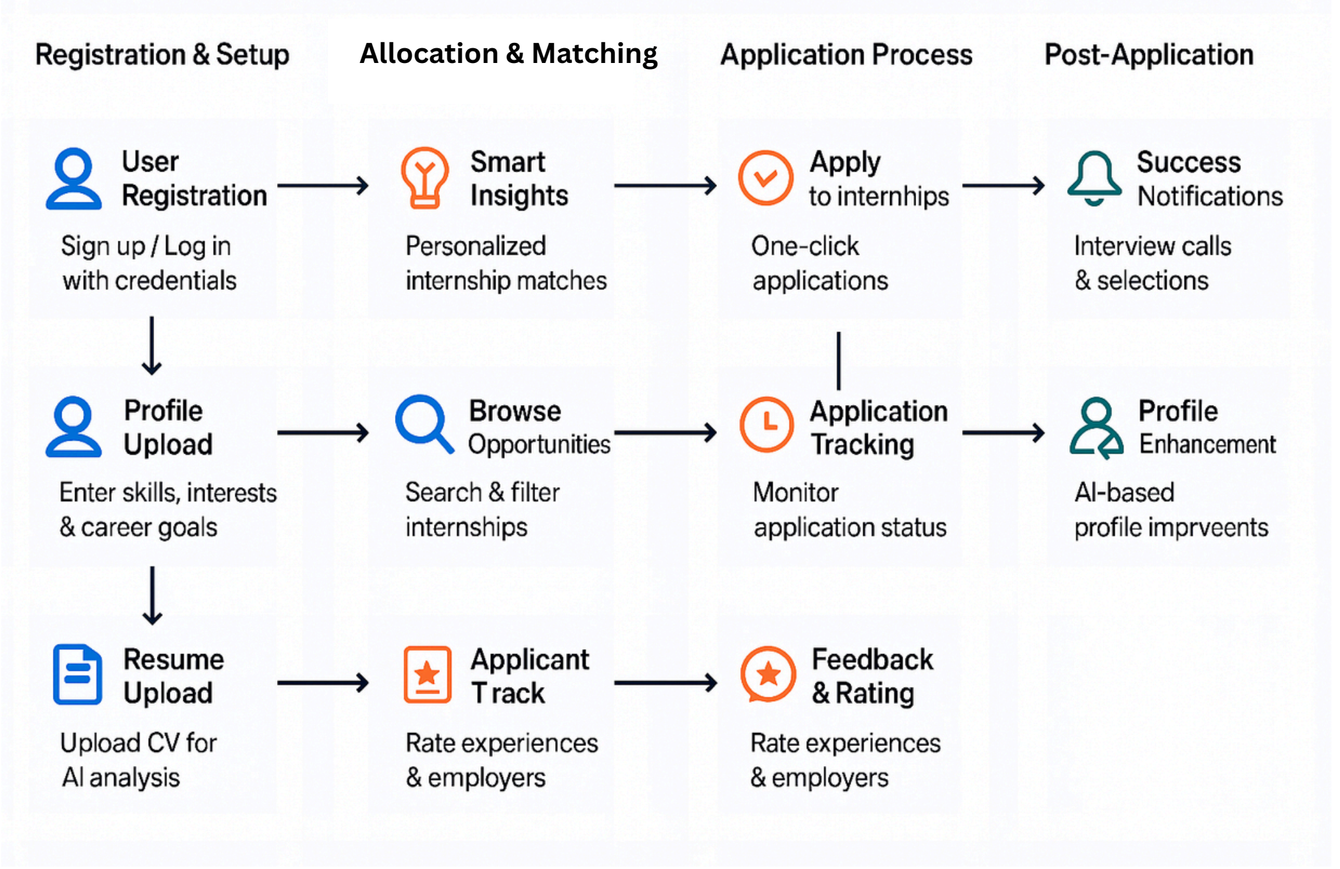

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FEASIBILITY AND VIABILITY

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Feasibility:

- The AI allocation and matching concept is feasible, leveraging existing machine learning algorithms and data science techniques.
- Data can be collected from **user profiles, preferences, behaviors, and historical data** to train models.
- Technologies such as **collaborative filtering, content-based filtering**, or **hybrid matching** systems can be used depending on the use case.

Potential Challenges and Risks:

- **Data quality and availability:** Poor or insufficient data can affect model performance.
- **Privacy and ethical concerns:** Handling sensitive or personal data must comply with regulations.
- **Scalability:** Handling large user bases and data volumes can challenge system performance.

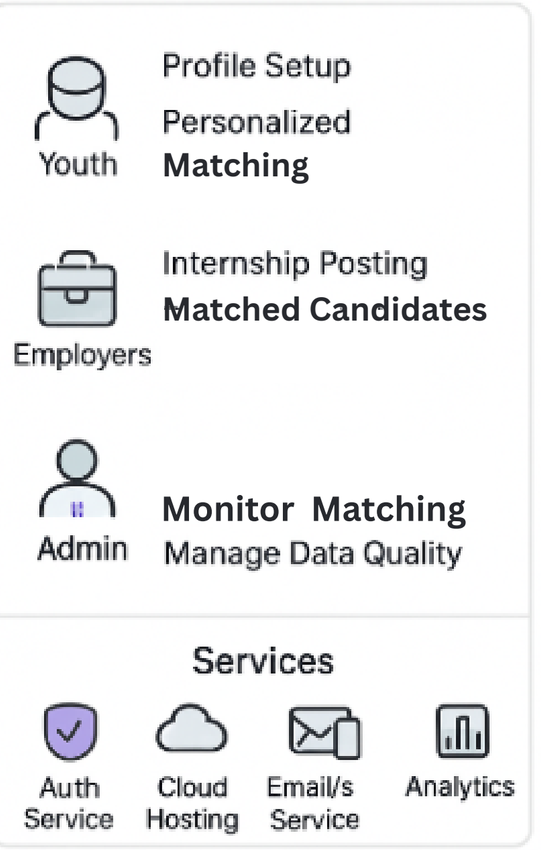
Strategies to Overcome Challenges:

- Ensure **data** cleaning, preprocessing, and augmentation to improve data quality.
- Implement **strong privacy protections, anonymization, and transparent data-use policies**.
- Regularly audit algorithms for bias; use techniques like fairness-aware machine learning.
- **Architect scalable systems** using cloud services, efficient algorithms, and caching.

Unique Selling Proposition:

- **Personalized Matching:** Using advanced AI algorithms to understand individual preferences and behavior for tailored allocation.
- **Adaptive Learning:** Continuously improving the matching accuracy by learning from user interactions and feedback.
- **Scalability:** Supporting a large number of users efficiently with fast, real-time allocation generation.

Restricted functional Module



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IMPACT AND BENEFITS

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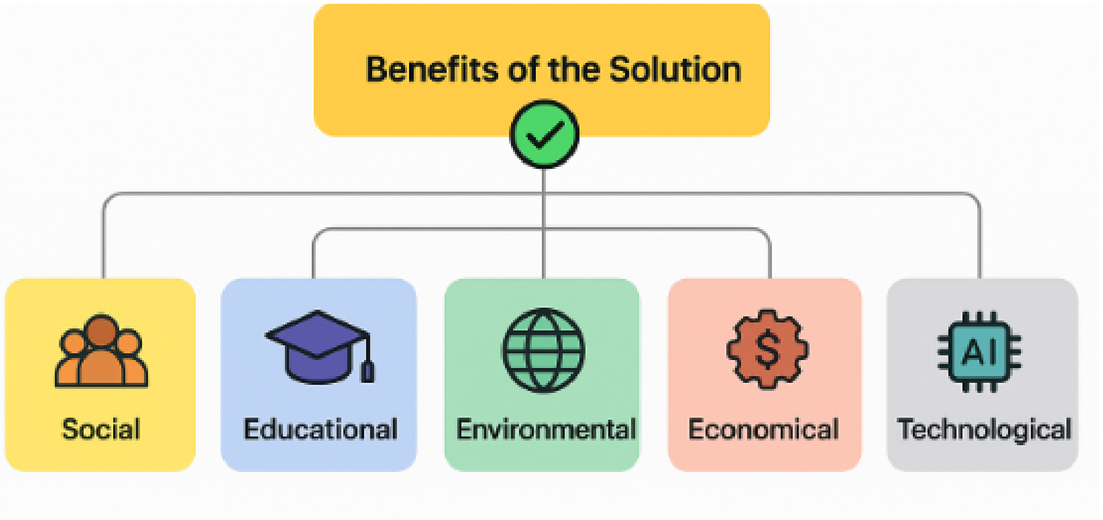

BENEFITS OF THE SOLUTION:-

SOCIAL BENEFITS:-

- Connects students with companies and professionals fostering community growth.
- Helps students from **diverse backgrounds** find internships .
- Encourages continuous learning by matching candidates with internships .

ECONOMIC BENEFITS:-

- Helps companies find better-suited interns.
- **Saves time** and resources in the internship search and recruitment process.
- It can boost the chances of full-time employment after internships.

ENVIRONMENTAL BENEFITS:-

- It **lowers carbon emissions** from travel.
- **Minimizes paper use** and physical resources.

TECHNOLOGICAL BENEFITS:-

- Uses machine learning algorithms to analyze candidate profiles and preferences.
- Ensures smooth user experience on smartphones.
- Includes **audio prompts** and multilingual support for broader accessibility.

POTENTIAL IMPACT ON TARGET AUDIENCE:-

- **Improved Internship Matching** - AI allocated internships that truly fits the candidate's skills, interests, domain and preferences.
- **Increased Access**:- Supports multilingual, audio, and simplified interfaces, making internships accessible to all.

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RESEARCH AND REFERENCES

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REFERENCES:-

- **Internshala** :- https://internshala.com
- **Naukari** :- https://www.naukri.com
- **LetsIntern** :- https://www.letsintern.com

RESEARCH:-

- Integrating_Intelligent_Web_Scraping_Techniques_in_Internship_Management_Systems_Enhancing_Internship_Matching
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LIVE DEMO:- https://avsarx.pythonanywhere.com/

DEMO VIDEO:- https://www.youtube.com/watch?v=EVhAsE9wliE

SOURCE CODE:- https://github.com/sihnsut2025-hash/SIH2025-PS-25033/tree/main/source%20code