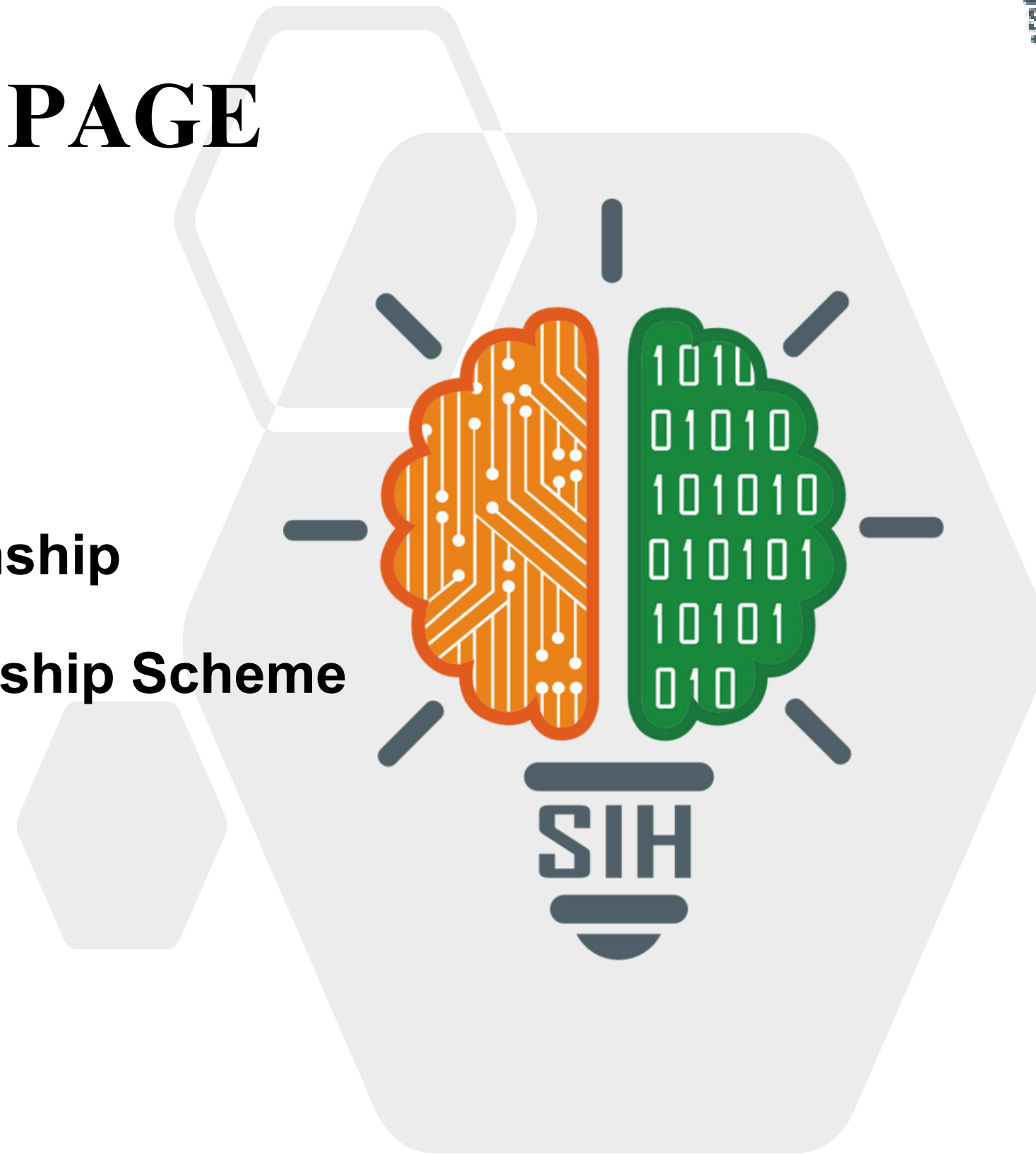


TITLE PAGE

- Problem Statement ID – SIH25034
- Problem Statement Title- AI-Base Internship Recommendation Engine for PM Internship Scheme
- Theme- Smart Education
- PS Category- Software
- Team ID-
- Team Name - VisionX



IDEA TITLE

“Internships simplified, futures amplified.”

❖ Idea/Solution :

On the **PM Internship portal**, a lot of students are unable to locate the internship that best suits their needs. Our Solution assists by displaying **three to five internships** that are best suited to their interests, education, skill set and location.

➤ Smart Recommendations

Helps students by picking out the top 3–5 internships that fit their education, skills, interests, and location preference.

➤ Hybrid AI Method

Uses a mix of simple rules and a lightweight AI model to give fair, flexible, and accurate suggestions.

➤ User-Friendly Interface

A clean and simple design with icons, less text, and multiple language options, making it easy for first-time users to explore.

➤ Web & Mobile Friendly

Students can easily use it through both the website and the mobile web app.

❖ Addresses the Problem :



Overwhelming Internships



Digital Literacy Struggles



Lack of Skill Matching



Drop-offs and Missed Opportunities



Heavy Mental Effort



No Adaptive Intelligence

Features of Our Solution



Smart Matching

Suggests best-fit internships based on skills and location.

Responsive, multilingual, visual-centric design.

Inclusive UI



Lightweight AI

Uses rule-based + ML-light for low-resource deployment.

Can be embedded into existing PM Internship Portal.

Seamless Integration



❖ Technology Stack:

Frontend Development:

React.js (PWA) + Tailwind CSS - For building a lightweight, A mobile-friendly, fast, and responsive, easy-to-use web app.

Backend Development:

Node.js (Express.js) - Fast, scalable, and efficient backend for handling APIs and business logic.

AI/ML Engine:

scikit-learn-Implements TF-IDF and Cosine Similarity for efficient internship recommendations.

Database:

MongoDb - Scalable choice for production deployment.

Accessibility & Extras:

React i18n-Multi-language support for inclusivity. Voice Assist - Speech-to-Text for rural/low-literacy users.

Deployment & Hosting:

Netlify - Hosting the frontend (React PWA).
Render - Hosting the backend (FastAPI APIs).

❖ Core AI Logic:

Rule Filters:

Education, Location, Sector, Duration

Re-Ranker:

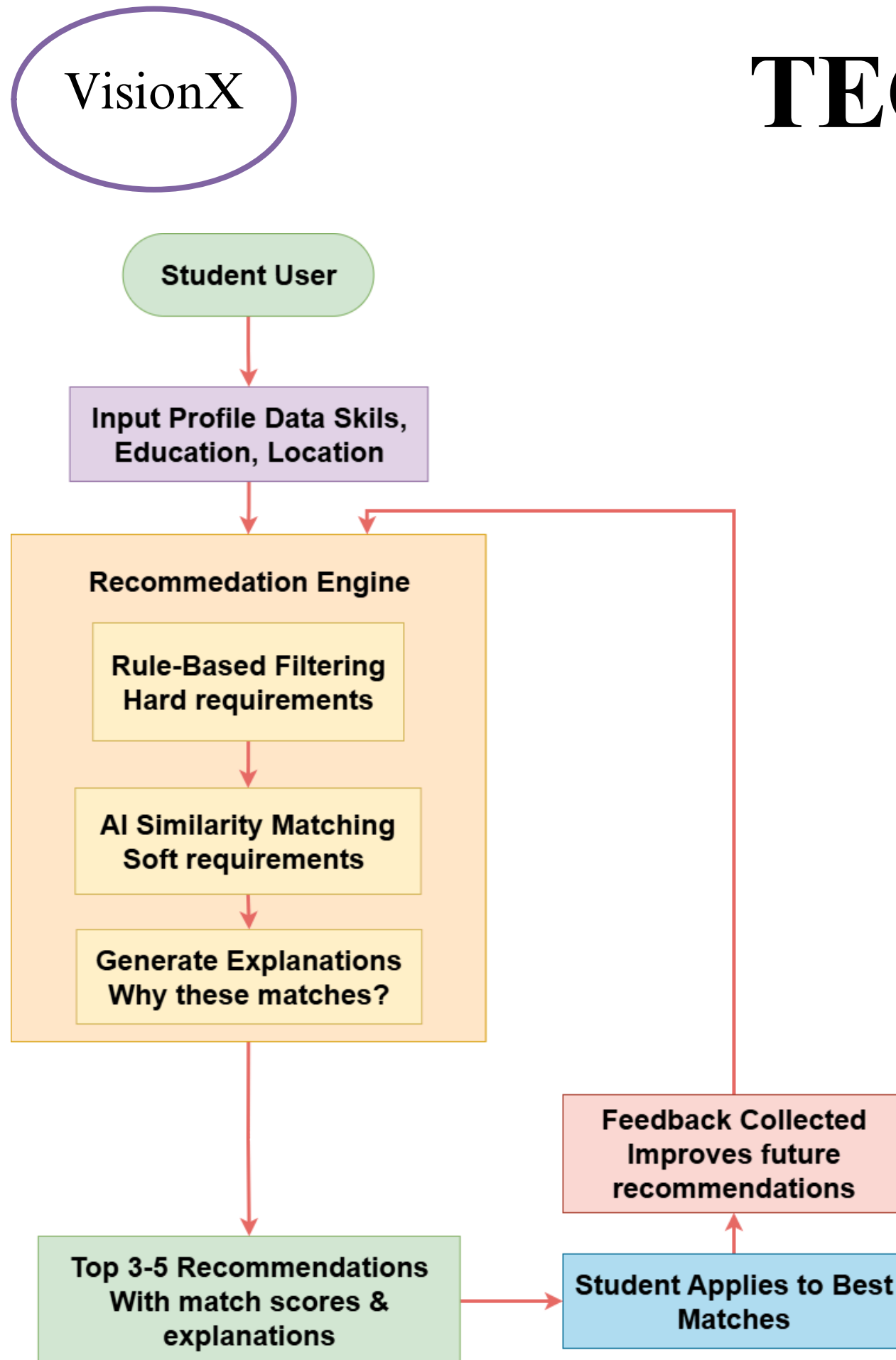
TF-IDF / Embeddings → cosine similarity

Weighted Score:

Skills (40%) + Location (30%) + Education (20%) + Stipend (10%)

Explainability:

“Skill match: 85%
Location: ✓
Education: ✓



❖ Feasibility of the idea

- **Technical:** ⚙️ Uses React/Flutter for UI, Node.js + Python for backend/AI. Lightweight,scalable & integration-ready with PM Internship Portal.
- **Operational:** 🧩 Built to be lightweight and responsive, so students with low internet speeds can still access recommendations smoothly.
- **Economic:** 💡 Uses cost-efficient, open-source tools to minimize expenses and maximize the scheme's value for students and government.

❖ Challenges and Risks

- **Technical:** 🔒 Ensuring safe user data handling and integrating with current portal APIs.
- **Operational:** 👤 Ensuring trust in AI recommendations; gaining adoption among students with low levels of digital literacy.
- **Economic:** 💰 Keeping infrastructure affordable; risk of scaling costs if user base grows quickly.

❖ Strategies for Overcoming Challenges

Technical Strategies:

- Conduct thorough testing of all API connections before deployment.
- Strengthen data security with encryption, access control, and regular security checks.

Operational Strategies:

- Provide easy user guidance with tutorials, icons, and multilingual support.
- Build trust in AI by showing simple explanations for each recommended internship.

Economic Strategies:

- Low Cost → Use free cloud credits + open-source tools
- Scalable → Pay-as-you-go serverless APIs
- Funding → Govt. & CSR program support
- Sustainable → Feedback loop reduces future cost

❖ Target audience:

1. For Students / Youth

- Personalized 3–5 internship recommendations → saves time & effort.
- Equal access via multilingual + audio UI (digital inclusion)

2. For Government / Ecosystem

- Promotes fair & inclusive access to opportunities
- Generates data-driven insights for policy & skill development.

3. For Institutions / Colleges

- Easy tracking of student internship participation
- Bridges skill gaps by aligning students with relevant opportunities
- Enhances placement & employability outcomes

❖ Benefits of the Solution:

Social Benefits:

- Promotes equitable access to opportunities across rural, tribal & urban youth.
- Reduces drop-offs & mismatched applications.
- Enhances digital inclusion with multilingual, audio-assisted design.

Economic Benefits:

- Higher employability → smoother transition from education to jobs.
- Reduces recruitment costs for organizations by filtering better-fit candidates.
- Supports government goals of skilling India's youth at scale.

Environmental Benefits:

- Less Travel → Students find local internships → lowers travel & carbon emissions.
- Resource Efficiency → Lightweight AI uses minimal computing power compared to heavy ML.

- AI-Based Job Recommendation using BERT
link: <https://ieeexplore.ieee.org/document/10392119>
- AI-Based Internship Placements Using Competence (Elman Neural Network)"
link: <https://techxplore.com/news/2019-03-ai-based-internship-placements.html>
- What's Next? A Recommendation System for Industrial Training
link: <https://link.springer.com/article/10.1007/s41019-018-0076-2>
- PM Internship Portal
link: <https://pminternship.mca.gov.in>
- Personalized Job Search with AI
link: [Personalized Job Search with AI](#)