



**GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
UNIVERSITY, ODISHA, GUNUPUR**
Department of Computer Science & Engineering
Statement of Purpose – Major Project

1. Title of the Project:

AI-Based Internship Recommendation Engine for PM Internship Scheme

2. Abstract:

The proposed project focuses on developing an AI-based internship recommendation system for the PM Internship Scheme to assist students in identifying suitable internship opportunities. Many applicants, particularly from rural, remote, and economically weaker backgrounds, face challenges due to lack of career guidance and limited digital awareness. This system collects essential user details such as educational background, skills, interests, and preferred location, either through manual input or resume upload. Using a lightweight AI-based recommendation model, the system analyzes the user profile and suggests the top 3–5 most relevant internships. The platform is designed to be mobile-friendly, easy to navigate, and accessible to users with low digital literacy. The project aims to improve internship alignment, enhance participation quality, and support inclusive career development under the PM Internship Scheme.

3. Objectives:

The primary objective of this project is to design and develop a simple yet intelligent internship recommendation platform that supports students in making informed decisions. The system aims to recommend internships that closely match a student's skills, educational background, interests, and location preferences. Another key objective is to support users with limited digital experience by providing a guided, visual, and easy-to-understand interface. The project also seeks to reduce mismatched and random internship applications, thereby improving the effectiveness of the PM Internship Scheme. Additionally, the platform is intended to be mobile-compatible, scalable, and easily integrable with existing government portals.

4. Introduction / Problem Statement:

The PM Internship Scheme offers a large number of internship opportunities across various sectors and regions in India. While this initiative has significant potential to enhance youth employability, many students struggle to select suitable internships due to lack of awareness, guidance, and digital exposure. First-generation learners and students from rural or underprivileged areas often apply to internships without understanding skill requirements, leading to poor outcomes and missed opportunities. The absence of a personalized recommendation mechanism makes the process inefficient for both applicants and program administrators. Therefore, there is a strong need for an intelligent system that can guide students toward the most relevant internships in a simple and user-friendly manner. This project addresses this gap by using artificial intelligence to provide personalized, focused, and accessible internship recommendations.

5. Expected Input & Expected Output:

Expected Input

The system will accept basic and easily understandable user inputs. These include educational qualifications, skills (entered manually or extracted from a resume), internship sector preferences, and preferred geographical location. Users may optionally upload their resume in PDF format, from which relevant skills and information will be automatically

extracted using resume parsing techniques. All user data will be collected securely through a structured form-based interface.

Expected Output

Based on the input data, the system will generate a list of the top 3–5 internship recommendations best suited to the user's profile. Each recommendation will include key details such as internship title, organization name, location, and required skills. The system will also display a skill match percentage to help users understand relevance. Direct application links will be provided, along with an option to download the recommendations as a PDF report for future reference.

6. Proposed Methodology / Techniques to be Used:

The project will follow a systematic and modular methodology. Initially, user data will be collected through registration forms or resume upload. Resume parsing and basic NLP techniques will be applied to extract skills and relevant keywords. A lightweight recommendation engine will then compare the user profile with internship data using rule-based matching or similarity measures such as cosine similarity. The internships will be ranked based on relevance scores, and the top recommendations will be displayed. The frontend will present the results in a clean and simple card-based format, while the backend will handle data processing, recommendation logic, and user management.

7. Novelty / Contribution:

The novelty of this project lies in its strong focus on accessibility, simplicity, and low-resource deployment. Unlike complex recommendation systems, this solution uses a lightweight AI approach suitable for large-scale government platforms. The system limits recommendations to a small, meaningful set instead of overwhelming users with long lists. It also emphasizes guided navigation and visual design for users with low digital literacy. Additionally, the project is designed to support regional languages and can be easily integrated with the existing PM Internship Scheme portal, making it practical and scalable.

8. Dataset Description :

The dataset used in this project will consist of internship listings sourced from government-approved or PM Internship Scheme-related platforms. Each dataset record will include internship title, sector, required skills, location, duration, eligibility criteria, and application link. User profile data will include education, skills, preferences, and resume-based information. For prototype development, sample or synthetic datasets may be used, with the ability to update and expand the dataset dynamically as new internships are added.

9. Expected Outcomes / Deliverables:

The expected outcome of this project is a fully functional, web-based internship recommendation platform. Deliverables include a lightweight AI recommendation model, a resume upload and skill extraction feature, and a personalized user dashboard displaying recommended internships. The platform will be responsive, mobile-friendly, and deployment-ready. Additional deliverables include technical documentation, a demo dataset, and a working prototype suitable for presentation, evaluation, and future integration.

10. References / Tools & Technologies :

Tools & Technologies

The project will use modern and reliable technologies for development and deployment. The frontend will be built using Artificial Intelligence & Machine Learning, React to ensure performance and responsiveness. The backend will use JavaScript (Node.js) for handling logic and APIs. AI techniques such as rule-based matching and cosine similarity will be used for recommendations. Tailwind CSS will be used for styling, and Chart.js or Recharts will provide simple visual insights. Clerk will manage secure authentication, MongoDB will store user and internship data, and Vercel will be used for deployment.

References

Key references include official PM Internship Scheme documentation, standard concepts from recommendation system research, and academic or industry resources on resume parsing and natural language processing.

Signature of the student

Signature of the supervisor