

# Project Title: End-to-End AI-Driven Recruitment Pipeline with Real-Time Interview Insights and Cultural Fit Scoring

## Project Statement:

This project aims to develop a comprehensive AI-powered recruitment solution that revolutionizes the entire hiring process, from candidate sourcing to final selection. By leveraging LLMs like OpenAI GPT, Meta LLaMA for natural language processing and sentiment analysis, and integrating with Google Sheets, Emails, and Calendly, the system will provide real-time interview analysis, cultural fit scoring, and automated candidate management. This solution will streamline talent acquisition, reduce bias, and enhance the overall quality of hires by providing data-driven insights throughout the recruitment pipeline.

## Outcomes:

- Automated candidate sourcing and screening, leveraging AI to evaluate resumes and LinkedIn profiles for optimal skill alignment.
- Real-time cultural fit analysis during interviews, assessing candidate responses and interaction styles for organizational compatibility.
- Seamless integration of interview insights, follow-up actions, and scheduling across multiple platforms.
- Data-driven decision-making in the hiring process, reducing bias and improving the quality of hires.

## Modules to be Implemented:

1. AI-Powered Candidate Sourcing and Resume Screening Engine
  - Integrates with LinkedIn API for candidate discovery.
  - Utilizes CV data for resume parsing and initial screening.
2. Real-Time Interview Analysis and Cultural Fit Assessment System
  - Employs NLP for sentiment analysis during live interviews.
  - Evaluates candidate responses for cultural alignment and skill match.
3. Automated Scheduling and Notification Hub
  - Syncs with Calendly for efficient interview scheduling.
  - Integrates with Slack or Email for automated follow-ups and team notifications.
4. Comprehensive Recruitment Analytics Dashboard
  - Provides insights on candidate pipeline, interview performance, and hiring trends.
  - Offers recommendations for process optimization and bias reduction.

## Milestones:

### Milestone 1: Weeks 1-2

#### **Introduction & Initial Training**

Objective: Set up the project infrastructure, introduce team members to the tools (LLMs like OpenAI GPT, Meta LLaMA), and gather initial data for training models.

Tasks:

- Set up the environment for candidate sourcing (e.g., integration with Indeed or via csv of candidate details).
- Train team members on using LLMs for resume screening and sentiment analysis during interviews.
- Begin collecting initial data from mock resumes and interviews.

### Milestone 2: Weeks 3-4

#### **Module 1: AI-Powered Candidate Sourcing & Resume Screening Engine**

Objective: Build a system that automates candidate sourcing from API while parsing resumes for skill alignment.

Tasks:

- Implement API integration to source candidates based on job requirements.
- Develop algorithms to parse CVs/resumes using NLP to identify key skills relevant to the job.

### Milestone 3: Weeks 5-6

#### **Module 2 & 3: Real-Time Interview Analysis & Automated Scheduling Hub**

Objective: Develop a system that analyzes interview responses in real time while automating scheduling through Calendly.

Tasks:

- Implement sentiment analysis using LLMs (OpenAI GPT, Meta LLaMA) to assess cultural fit during live interviews.
- Integrate Calendly for automated interview scheduling; sync notifications through Slack or Email.

### Milestone 4: Weeks 7-8

#### **Module 4: Recruitment Analytics Dashboard Deployment**

Objective: Provide real-time insights into candidate performance through an integrated dashboard synced with CRM tools.

Tasks:

- Deploy an interactive dashboard that tracks candidate progress through the pipeline using data visualization libraries like 'matplotlib' or 'seaborn' etc.

- Provide actionable insights on interview performance, cultural fit scoring, and recommendations for reducing bias in hiring decisions.

### Evaluation Criteria:

- Milestone 1 Evaluation (Week 2): Successful setup of the project environment, initial training completed, and first batch of mock resumes/interviews collected.
- Milestone 2 Evaluation (Week 4): Candidate sourcing engine deployed; resumes parsed successfully based on skill alignment using LinkedIn API integration.
- Milestone 3 Evaluation (Week 6): Real-time interview analysis implemented; automated scheduling system integrated with Calendly/Slack/Email.
- Milestone 4 Evaluation (Week 8): Recruitment analytics dashboard deployed; actionable insights provided on candidate performance and hiring trends.