

# HACKXTREME'26



## **Problem Statement: Creating a Semantic AI Engine for Cross-Platform Requirement Creation and Automated Skill Mapping include ML & DL**

**Objective:** Develop an automated AI Skill-Matching Engine that generates structured Competency Profiles based on raw experience data, project history, and technical certifications. The system should support multiple Evaluation Frameworks (standardized industry taxonomies, specific job descriptions, or internal role benchmarks) and produce consistent, data-driven Match Reports. It should also extract latent skills, identify critical gaps, and map transferable competencies across different career domains.

### **Main Criteria to Validate:**

- o **Semantic Analysis:** Use vector embeddings to assess "intent" and "experience depth" in addition to basic keyword matching.
- o **Gap Identification:** Automatically draw attention to any essential abilities or credentials that the job description calls for.
- o **Bias Mitigation:** To guarantee that the match score is solely determined by merit and talents, offer the option to anonymize resumes.
- o **Actionable Feedback:** Provide candidates with AI-driven recommendations on how to better express their current experience in order to fit particular opportunities.

### **Deliverables:**

- o **Unified Skill Extraction Engine:** In addition to identifying explicit keywords, the program must extract latent skills from task descriptions and provide each candidate with a structured Skill Profile.
- o **Semantic Match & Gap Analysis Tool:**
  - **Functionality:** A human-readable description of the match that is divided into three categories Core Strengths, Transferable Skills, and Critical Gaps must be returned.
  - **Comparison:** To determine the "Best Fit" based on present capacity against necessary upskilling, the tool should be able to compare a single candidate against several job descriptions and vice versa.
- o **Resolver style Capability & Policy Summary:** A diagnostic function that requests a summary of a candidate's professional "policies" or "capabilities" from the "Skill Engine" (e.g., "Senior-level Proficiency in Distributed Systems," "Certified Project Management Compliance"). It should offer a standardized score (0–100%) that shows how well the candidate's verified background validates their stated abilities.

# HACKXTREME'26

o **Interactive Dashboard:** A visualization interface designed for feature selection, allowing recruiters or candidates to toggle specific skill requirements (e.g., "Must have Cloud Security") to see how the match score fluctuates across a pool of profile.

**Description:** Skill Match AI is an advanced recruitment tool that enhances the connection between job descriptions and candidate profiles. Unlike traditional keyword filters that can overlook qualified candidates due to differences in wording, it leverages Natural Language Processing (NLP) and Large Language Models (LLMs) to grasp the semantic meaning within resumes.

*For example, instead of just searching for the keyword "Python," it recognizes that a candidate who "architected scalable backend systems using Django" is a strong fit for a Senior Backend Developer position. This approach ensures more accurate and meaningful matching of talent to job roles.*