Title: AI-Powered Resume Analyzer & Skill-Based Job Recommendation Agent

Aligned with SDG 8 – Decent Work and Economic Growth

Name: Roshani Kadu
Program: AI-ML Internship
College: Guru Nanak Khalsa College of Arts, Science and Commerce, Matunga, Mumbai - 19

Introduction

Unemployment and underemployment remain major global challenges, especially among students, fresh graduates, and early-career professionals. Many individuals possess educational qualifications but lack clarity on required skills, suitable job roles, and overall employment readiness. Traditional career guidance systems are often inaccessible, generic, or outdated.

Advancements in Artificial Intelligence (AI) provide an opportunity to build intelligent, personalized, and scalable career guidance systems. This project proposes an AI-powered career guidance and employment readiness agent that analyzes user skills, education, and experience to recommend suitable job roles, identify skill gaps, and assess readiness for employment.

Problem Statement

Many job seekers struggle to identify suitable career paths due to:

- Lack of personalized career guidance
- Mismatch between existing skills and job market requirements
- Limited awareness of skill gaps needed for employment
- Inadequate access to professional career counseling

As a result, individuals face delayed employment, underemployment, and reduced economic participation, which negatively impacts sustainable economic growth.

Objectives

The key objectives of this project are:

- To design an AI-based career guidance agent aligned with SDG 8
- To analyze user-provided skills, education, and experience
- To recommend suitable job roles based on skill matching
- To identify skill gaps and suggest improvement areas
- To assess employment readiness using AI-driven logic
- To provide an accessible and scalable career support solution

---

Why This Problem?

Youth unemployment and skill mismatch are critical barriers to economic growth. Many individuals invest time and resources in education but remain unemployable due to lack of industry-aligned skills and career clarity. Addressing this gap through AI-driven guidance can:

- Improve employability
- Reduce job-search time
- Enable informed career decisions
- Promote inclusive economic participation

Proposed Solution

The proposed solution is an **AI-Powered Career Guidance and Employment Readiness Agent** that functions as a decision-making system. The agent accepts structured user input and autonomously processes it to generate actionable career insights.

Key Features:

- Skill extraction and analysis
- Education-based eligibility assessment
- Experience-based job role matching
- Resume scoring mechanism
- Skill gap identification
- Employment readiness classification

The system provides personalized recommendations rather than generic advice, making it more impactful and relevant.

AI Solution Design and Workflow

Input:

- User skills (comma-separated)
- Highest educational qualification
- Years of experience

Processing (AI Agent Logic):

- Skill matching with predefined job-role requirements
- Rule-based scoring combined with experience weighting
- Decision-making for job recommendations
- Readiness assessment logic

Output:

- Extracted skills
- Resume score
- Recommended job roles
- Skill gaps for each role
- Employment readiness status

Tools and Technologies Used

- **Python** – Core programming language
- **Google Colab** – Development and execution platform
- **AI-based decision logic** – Skill matching and scoring engine
- **IBM SkillsBuild / AI Concepts** – Conceptual alignment with applied AI workflows

---

Target Audience

- Students and fresh graduates

- Job seekers and early-career professionals
- Individuals seeking career transitions
- Training institutions and career counseling platforms

Expected Outcomes and Impact

- Improved awareness of skill gaps among job seekers
- Better alignment between individual skills and job roles
- Enhanced employment readiness
- Reduced dependency on manual career counseling
- Contribution toward decent work and sustainable economic growth

---

Ethical and Responsible Use of AI

The system uses predefined logic and transparent decision-making. No personal sensitive data is stored. The recommendations are advisory in nature and aim to support informed career decisions without bias or discrimination.

Conclusion

This project demonstrates the application of AI in solving a real-world problem aligned with SDG 8. By integrating skill-based analysis, career guidance, and employment readiness assessment, the AI-powered agent provides a scalable and socially relevant solution that supports economic growth and decent work opportunities.