PROJECT ABSTRACT

Title:
AI-Based Career Path Predictor using Machine Learning and Resume Analysis

Abstract:

This project presents an AI-powered Career Path Prediction System that recommends suitable career paths, job roles, required skills, and learning resources based on user inputs. The system supports two input methods: a structured questionnaire (skills, interests, education, experience) and resume upload with automatic text extraction.

Using predefined datasets and machine learning classification models, the system analyzes user profiles and predicts the most suitable career domains such as Software Developer, Data Analyst, UI/UX Designer, AI Engineer, etc. The backend is developed using Python (Flask), and the frontend is built using HTML, CSS, and JavaScript. The system also uses Natural Language Processing (NLP) techniques for resume parsing.

The goal of this project is to guide students and working professionals in making informed career decisions using Artificial Intelligence.

FRONTEND

Home Page

- Project title
- Small description
- “Get Started” button

Choose Input Page

- Option 1 → Fill Questionnaire
- Option 2 → Upload Resume

Questionnaire Page

- Name
- Education
- Skills (checkbox / multi-select)
- Interests
- Experience level
- Submit button

Resume Upload Page

- Upload PDF/DOCX
- Submit button

6️⃣ **Result Page**

- 🎯 Predicted Career Path
- 💼 Suggested Job Roles
- 🛠️ Required Skills
- 📚 Learning Resources
- 📊 Skill Gap (Missing Skills)

BACKEND

You can say your backend contains these modules:

1. app.py (Main Application Module)
2. user_input_module
3. resume_parser_module
4. preprocessing_module
5. feature_extraction_module
6. model_training_module
7. prediction_module
8. skill_matching_module
9. database_module
10. recommendation_module
11. authentication_module (optional)
12. admin_module (optional)