Milestone 2

SkillSense: Smart Job Fit Analyser

Palash Gupta
Team C | Batch 4 & 5

The Job Seeker's Dilemma

Palash

Judging Resume Fit

Job seekers often find it challenging to accurately gauge how well their resume aligns with a specific job description, leading to missed opportunities.

Identifying Skill Gaps

Many are unaware of the specific skills they lack for a desired role, making it difficult to target their development efforts effectively.

Manual Tailoring Effort

Manually customising resumes for each application is an incredibly time-consuming and often error-prone process.

Project Overview

What SkillSense Does ?

- SkillSense is an AI-powered resume intelligence system designed to help job seekers understand how well their resume matches a job description and what skills they need to improve.
- It's a personal career assistant, providing actionable insights to land the dream job.

High Level Workflow with Tech Stack

Palash

1. Upload Resume
User uploads a resume (PDF/Docx) with automatic text extraction.

2. Extract Skills & Experience
System extracts skills and experience using NLP pipelines (spaCy + rule-based patterns).

3. Process Job Description
Skills, keywords, and context are meticulously extracted from the job description.

4. Semantic Matching
Resume versus JD embeddings are compared using sentence-transformers.

5. Generate Match Score
A similarity score is generated, indicating the overall job fit.

6. Recommend Missing Skills
System identifies and recommends skills present in the JD but missing from the resume.

Streamlit

Frontend

django

Backend

MySQL

Database

SBERT.net

Sentence-Transformers

spaCy

NLP

Hugging Face

ML

- *User uploads their resume*
- *System extracts and cleans the text*
- *Key skills are detected automatically*
- *Resume and job description are compared using embeddings*
- *A match score (by cosine similarity)and skill gap summary are generated*

Bindu

Resume Matcher

Technical Workflow

Bindu

Resume Matcher (Core Engine of SkillSense)

- ***Text Pre-processing: Cleans and breaks down resume text for easy analysis.***
- ***NER (Entity Detection): Finds important details like skills, experience, education, and job roles.***
- ***Semantic Analysis: Understands the meaning and context behind the extracted information.***
- ***Similarity Scoring: Matches resume details with job requirements to check how well they fit.***

Outcome:

Provides a clear and accurate understanding of a candidate's profile — not just keyword matching, but real qualification assessment.

- Growing Skill Gap in Industry
- Recruiters Prefer Skill-Aligned Candidates
- Self-Awareness Problem
- Overwhelming Learning Landscape

SKILL RECOMMENDER

Why it’s Needed & Core Idea

CORE IDEA OF SKILL RECOMMENDER

Omkar

Input

Job Description Analysis

Skill Gap Detection

Personalised Recommendations

Ranking Among Resumes

Output

SKILL RECOMMENDER

Technical Overflow+Recommendation Algorithms:

SKILL RECOMMENDER:

Technical Workflow:

- Extract skills from candidate resumes using NLP.
- Convert extracted skills into embeddings (vector representations).
- Compare candidate skills with job skill database.
- Rank missing or recommended skills based on similarity.

Recommendation algorithm:

- Rule-Based: Directly suggest skills required for a job role.
- Content-Based: Suggest skills similar to candidate's existing skills using embedding similarity.
- Optional: Hybrid approach combines both for optimal recommendations.

TECHNICAL OVERFLOW:

Manikanta
Rashik

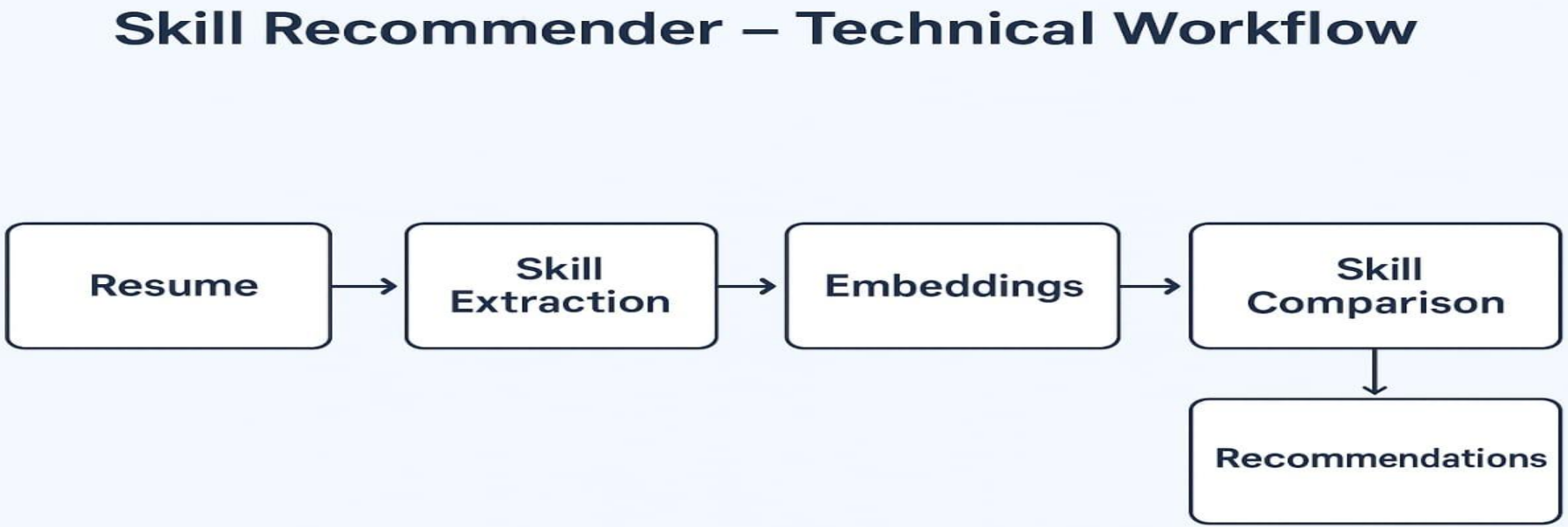
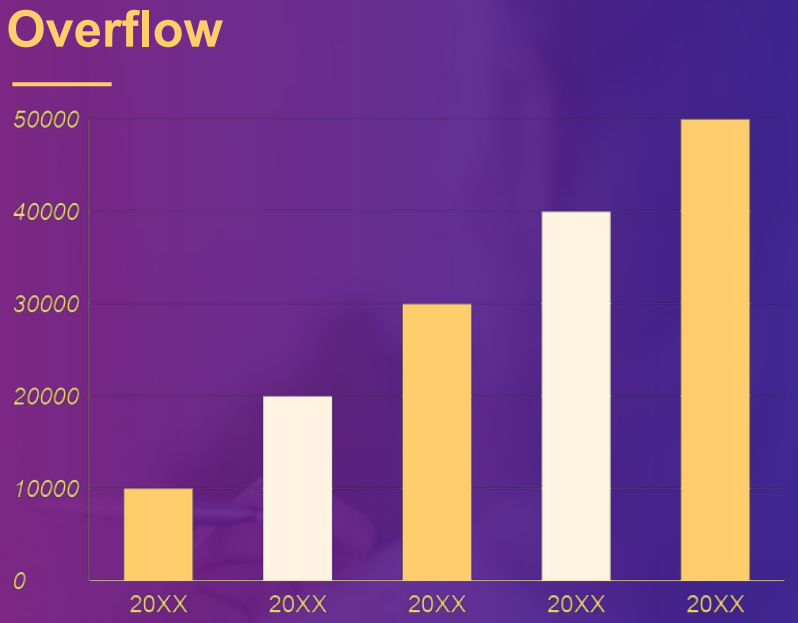


CHART SLIDE

AI-Enhanced Resume Performance

Skill Sense leverages NLP, machine learning, and intelligent resume parsing to significantly improve how user skills and experiences are analyzed. By integrating technologies such as spaCy,Django REST, and Sentence-Transformers, the system delivers more accurate skill detection, faster processing times, and higher job-role relevance. These improvements help users generate clearer, ATS-friendly resumes that stand out in competitive hiring pipelines.



OVERVIEW SLIDE

Skill Extraction

Automatically identifies relevant skills using NLP pipelines built with spaCy and NLTK.

Resume Parsing

Processes pdf and docx files using pdfminer.six,and text tract to generative structured text.

Job Matching

Leverages Sentence-Transformers for semantic similarity scoring between resumes and job descriptions.

ATS Formatting

Creates clean and standardized resume formats designed to meet ATS parsing requirements.

User Interface

Streamlit provides a simple, responsive interface for uploading resumes and viewing extracted insights.

Backend Architecture

Django REST Framework and Docker deployment ensure robustness, modularity, and production readiness..

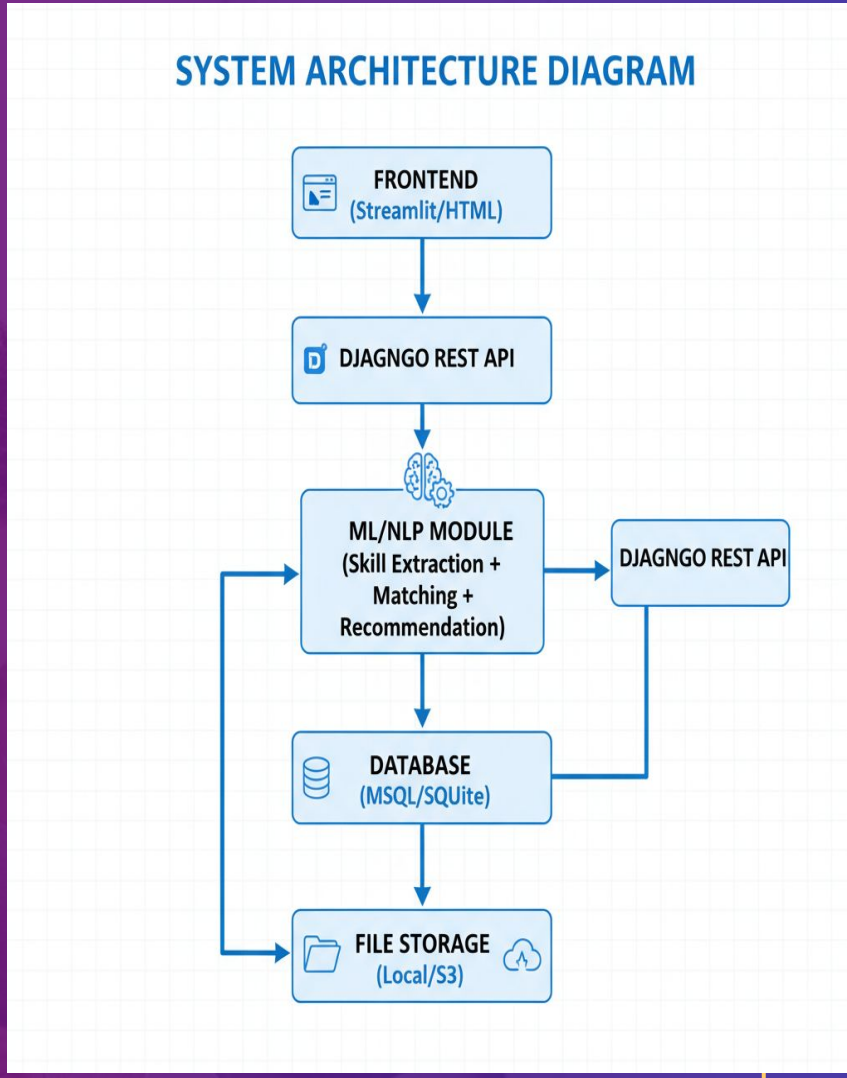
SKILL RECOMMENDER

System Architecture & Tech Stack

Om

System Architecture & Tech Stack

- Django → robust backend
- Streamlit → faster prototype
- MySQL → scalable database
- NLP models → accurate skill extraction
- Docker
- Nginx
- Cloud (AWS/Heroku)

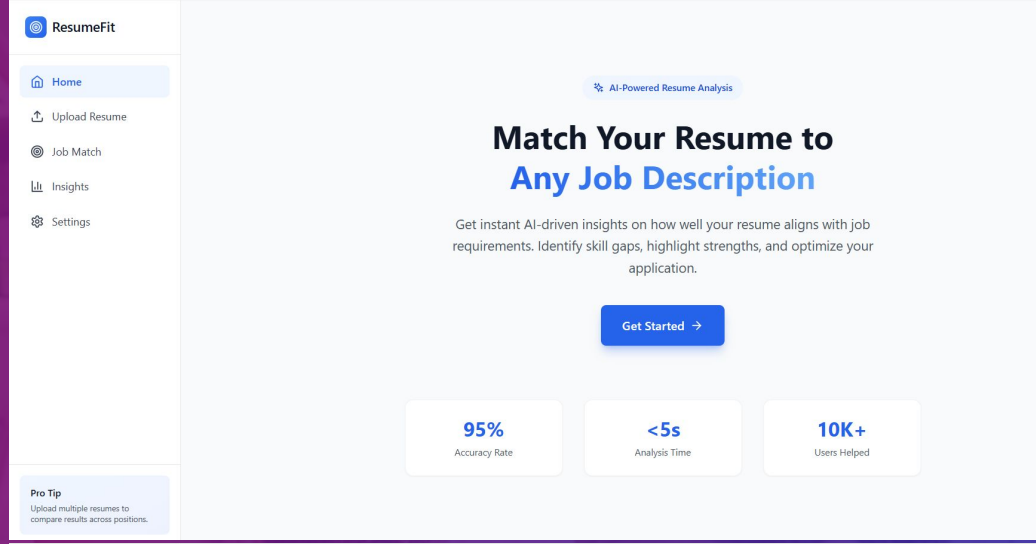


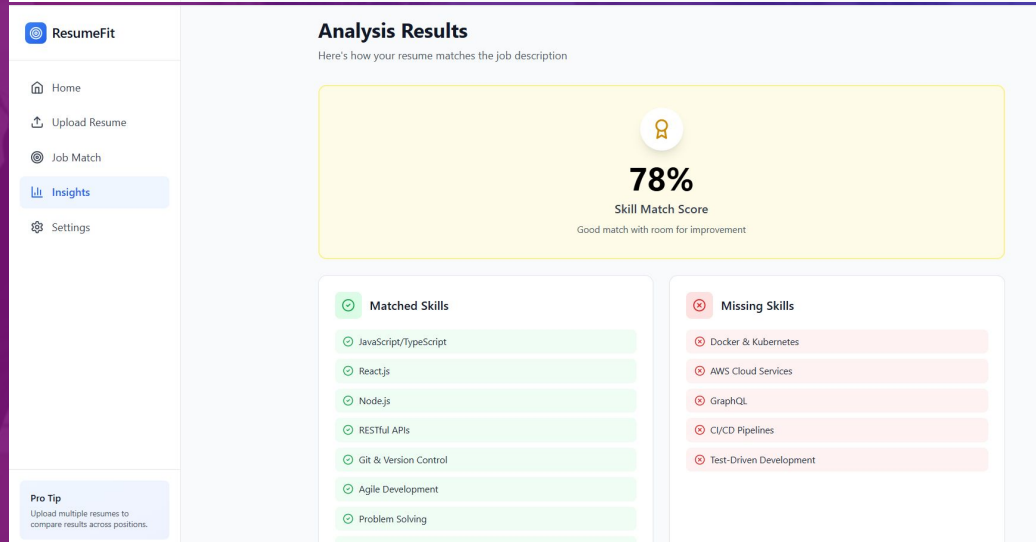
Om

UI Enhanced

Layout: Components reorganized into a clean, responsive grid for better clarity and quick navigation.

Visual Polish: Improved spacing, typography, and alignment to deliver a modern, user-friendly interface





- SkillSense helps users understand how job-ready they are
- Provides match scores and skill recommendations
- Useful for job seekers, career counselors, and placement cells

Om

THANK YOU!

Now, seeing the code….