

SkillMatch AI Project Documentation

Project Overview

SkillMatch AI is a full-stack platform that revolutionizes the hiring process by focusing on skills rather than job titles. The platform leverages AI to match candidates with opportunities based on actual abilities and potential rather than traditional resume metrics.

Problem Statement

Traditional hiring processes rely heavily on resumes and job titles, which often fail to identify the most qualified candidates. This approach creates two significant problems:

1. Talented individuals without traditional backgrounds struggle to get noticed
2. Employers waste resources screening inappropriate candidates
3. Skills gaps persist despite qualified candidates being available

SkillMatch AI addresses these issues through AI-driven skill matching and recommendation systems.

Solution Architecture

Platform Features

For Job Seekers:

- Create detailed skill profiles
- Update professional portfolios
- Apply for matched job opportunities
- Upload CVs for increased visibility
- Receive interview notifications
- Explore AI-recommended career paths

For Employers/Recruiters:

- Post job openings with required skills
- Review AI-matched candidates
- Chat with the system to query candidate database
- Schedule and conduct interviews
- Access hiring analytics

For Administrators:

- Manage user accounts
- Ensure platform security
- Monitor and improve AI accuracy
- Oversee system performance

Technology Stack

Frontend

- **Framework:** Angular
- **Features:**
 - Responsive design for all devices
 - Interactive dashboards
 - Real-time notifications
 - Intuitive profile management

Backend

- **Framework:** Node.js with Express
- **Database:** PostgreSQL
- **Authentication:** JWT with role-based access control

AI Integration

- **Models:** Integration with ChatGPT and Gemini
- **Functions:**
 - Skill matching algorithms
 - Career path prediction
 - Resume parsing (optional)
 - Intelligent chatbot for database queries

Infrastructure

- **Hosting:** AWS, Azure, or Google Cloud
- **Storage:** S3, Azure Blobs, or Cloudinary
- **Scalability:** Cloud-native architecture

System Architecture

The system consists of interconnected components:

- Frontend client application
- Backend API services
- Database layer
- AI processing modules
- Authentication services
- Storage systems

Database Schema

The database will be structured around these core entities:

1. Users

- Job seekers
- Employers/Recruiters
- Administrators

2. Skills

- Categorized skill repository
- Skill relationships and dependencies

3. Jobs

- Required skills
- Company information
- Application statistics

4. Applications

- Application status
- Matching scores
- Interview information

5. Portfolios

- User skills
- Projects
- Experience

6. CVs

- Stored documents
- Extracted information

Core Features Implementation

AI-Driven Job Matching

The system will:

1. Analyze job requirements
2. Map candidate skills to requirements
3. Generate a compatibility score
4. Rank and recommend matches to both parties

Real-Time Recruiter Engagement

Recruiters can chat with the system using natural language to query the candidate database:

- "Show me candidates with React.js skills"
- "Find frontend developers with 3+ years of experience"
- "Which candidates know both Python and TensorFlow?"

Career Guidance

Based on:

- Current skill set
- Industry trends
- Posted job requirements
- Career progression patterns

CV Upload and Processing

1. Secure document storage
2. AI-powered skill extraction
3. Automatic profile enhancement
4. Integration with matching algorithm

Interview Notification System

Automated email workflow:

- 1. Candidate selection
- 2. Interview scheduling
- 3. Confirmation and reminders
- 4. Follow-up communications

Project Timeline

Phase	Deliverables	Deadline
Planning	Figma & ERD Diagrams	Immediate
Frontend Development	Angular Implementation	April 13, 2025
Backend & AI Integration	Node.js APIs & AI Models	April 20, 2025
Testing & Deployment	QA & Production Release	April 21-23, 2025
Final Presentation	Demo & Documentation	April 24, 2025

Project Management

Tools

- Task Management: Jira, Trello, or Azure DevOps
- Communication: Slack, Microsoft Teams
- Documentation: Confluence, Google Docs
- Version Control: GitHub, GitLab

Contact

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Deliverables

- 1. Fully functional web application
- 2. Mobile-responsive interface
- 3. Documentation (technical and user)
- 4. 6+ ERD and workflow diagrams
- 5. Source code repository
- 6. Deployment instructions

Success Metrics

1. Candidate match accuracy
2. Employer satisfaction ratings
3. Platform usability scores
4. Technical performance metrics
5. User adoption rate

Future Enhancements

- Mobile application
- Advanced analytics dashboard
- Integration with popular job boards
- Expanded AI capabilities
- Internationalization