Resume Screening Assistant
Complete Documentation

Contents

1 System Overview

The Resume Screening Assistant is an advanced AI-powered application that streamlines the recruitment process by automatically analyzing resumes against job requirements. The system uses Google's Gemini AI model for intelligent analysis and provides detailed insights through an interactive dashboard.

Core Purpose

- Automate initial resume screening process
- Provide objective, bias-free candidate evaluation
- Generate comprehensive analysis reports
- Offer data-driven recruitment insights
- Support both individual and batch resume processing

2 Technical Architecture

2.1 AI Analysis Engine

- **Google Gemini AI Integration:** Powers the core analysis with advanced natural language processing
- **Role-Based Analysis:** Adapts evaluation criteria based on job level (Junior/Mid/Senior)
- **Multi-Factor Scoring:** Combines technical skills, experience, and cultural fit analysis

2.2 Resume Processing Pipeline

- **Document Handling:** Supports PDF, DOCX, and TXT formats
- **Text Extraction:** Intelligent parsing of resume content
- **Data Normalization:** Standardizes extracted information for consistent analysis

2.3 Database System

- **SQLite Backend:** Stores analysis results and candidate data
- **Structured Schema:** Organizes information for efficient retrieval
- **Transaction Management:** Ensures data integrity

3 Scoring Methodology

3.1 Role-Specific Evaluation

Senior Roles

- Technical Skills: 25%
- Leadership: 25%
- Experience: 25%
- Project Impact: 15%
- Cultural Fit: 10%

Mid-Level Roles

- Technical Skills: 35%

- Experience: 35%

- Project Management: 15%

- Cultural Fit: 15%

Junior Roles

- Technical Skills: 45%

- Learning Potential: 25%

- Basic Experience: 15%

- Cultural Fit: 15%

3.2 Recommendation Categories

Yes (Recommended)

- Senior Roles: $\geq 40\%$

- Mid-Level: $\geq 45\%$

- Junior Roles: $\geq 35\%$

Further Evaluation Needed

- Senior Roles: 30–39%

- Mid-Level: 30–44%

- Junior Roles: 25–34%

No (Not Recommended)

- Scores below the "Further Evaluation" threshold

4 Analysis Components

4.1 Technical Skills Assessment

- Matches required skills with resume content

- Evaluates proficiency levels

- Considers technology relevance

- Analyzes project complexity

4.2 Experience Evaluation

- Calculates relevant years of experience

- Assesses project scale and impact

- Evaluates leadership responsibilities

- Considers industry relevance

4.3 Cultural Fit Analysis

- Communication skills assessment
- Team collaboration indicators
- Adaptability metrics
- Professional growth potential

5 User Interface Features

5.1 Dashboard Components

- Interactive metrics display
- Real-time analysis progress
- Customizable filters
- Department-wise analytics

5.2 Result Visualization

- Score breakdown charts
- Skill distribution radar plots
- Experience level indicators
- Recommendation badges

5.3 Report Generation

- Individual candidate reports
- Batch analysis summaries
- Comparative analytics
- Export options (PDF/DOCX)

6 Implementation Details

6.1 Data Processing

- Asynchronous file processing
- Batch optimization
- Error handling and recovery
- Progress tracking

6.2 Security Measures

- Input validation and sanitization
- Secure file handling
- Data encryption
- Access control

6.3 Performance Optimization

- Response caching
- Database indexing
- Resource management
- Parallel processing

7 User Workflow

- **Job Description Input:** Text entry or file upload, Department selection, Role level specification
- **Resume Upload:** Single or multiple files, Format validation, Batch processing
- **Analysis Process:** AI-powered evaluation, Progress tracking, Real-time status updates
- **Results Review:** Detailed candidate cards, Comprehensive scoring, Interactive visualizations, Report generation

8 Maintenance and Updates

8.1 Regular Tasks

- Database optimization
- Model updates
- Performance monitoring
- Security patches

8.2 System Health

- Error logging
- Backup management
- Resource monitoring
- Update management