

# An Efficient Job Application Management System Using Spring Boot with Dashboard Visualization

Dr. Sreejith Vignesh BP, Mr. Bharathi M

Assistant Professor, Head Of Department of Information Technology, Sri Krishna Adithya College of Arts and Science,  
Coimbatore, Tamil Nadu, India.  
[sreejithvigneshbp@skacas.ac.in](mailto:sreejithvigneshbp@skacas.ac.in)

Department of Information Technology, Sri Krishna Adithya College of Arts and Science, Coimbatore, Tamil Nadu, India.  
[23bsit210bharathim@skacas.ac.in](mailto:23bsit210bharathim@skacas.ac.in)

## ABSTRACT:

The **AI-Based Job Application Tracking System for Career Opportunity Management** is a smart web-based system designed to help job seekers manage and track their job applications efficiently. Many candidates apply to multiple companies and often find it difficult to keep track of application status, interview schedules, and job opportunities. This system provides a centralized platform where users can store and monitor all their job applications in one place.

The system uses Artificial Intelligence techniques to organize application data, analyze job opportunities, and provide useful insights for better career management. Users can add job details, track the progress of applications such as applied, interview scheduled, rejected, or selected, and receive reminders for important events. The system also helps users manage resumes, company information, and application deadlines effectively.

The main objective of this project is to simplify the job application process and improve career opportunity management through automation and intelligent tracking. By using this system, job seekers can save time, stay organized, and make better decisions during their job search process.

**Keywords:** Artificial Intelligence (AI), Job Application Tracking, Career Opportunity Management, Web-Based System, Resume Management, Job Search Automation, Data Management, Employment Tracking.

## INTRODUCTION:

In today's competitive job market, job seekers apply to many companies through different online platforms. Managing multiple job applications, tracking their status, and remembering interview schedules can become difficult and confusing. Many candidates lose important opportunities because they forget application deadlines or fail to track the progress of their applications properly. Therefore, there is a need for an efficient system that can help users organize and manage their job applications in a structured way.

The **AI-Based Job Application Tracking System for Career Opportunity Management** is designed to solve this problem by providing a centralized platform where users can manage all their job applications in one place. The system allows users to record job details such as company name, job role, application date, and application status. It helps users easily monitor whether an

application is under review, shortlisted, rejected, or selected.

Artificial Intelligence can be used in the system to analyze application data, suggest better organization of job opportunities, and provide useful insights for job seekers. The system can also provide reminders for interviews, application deadlines, and important career events. This helps users stay organized and improves their chances of securing suitable employment.

The main goal of this project is to simplify the job search process by using a smart and user-friendly platform. By implementing this system, job seekers can effectively track their applications, manage career opportunities, and make better decisions during their job search journey.

## SYSTEM ARCHITECTURE:

The **AI-Based Job Application Tracking System for Career Opportunity Management** follows a structured architecture that consists of

three main layers: the **User Interface Layer**, the **Application Processing Layer**, and the **Database Layer**. These layers work together to ensure smooth functioning, efficient data processing, and secure storage of job application information.

### 1. User Interface Layer (Frontend):

This layer allows users to interact with the system through a web-based interface. It provides features such as user registration, login, adding job applications, viewing application status, and updating job details. The interface is designed to be simple and user-friendly so that users can easily manage their job search activities.

### 2. Application Processing Layer (Backend):

The backend handles the main logic of the system. It processes user requests, manages application data, and performs system operations such as adding, updating, deleting, and retrieving job application records. The Artificial Intelligence component can analyze job application data and provide insights such as tracking patterns or reminders for upcoming interviews.

### 3. Database Layer:

The database layer stores all the information related to users, job applications, resumes, company details, and application status. A secure database system ensures that all data is stored safely and can be accessed whenever needed.

### 4. AI Module:

The AI module helps in analyzing the stored data and assisting users in managing job opportunities more effectively. It can help categorize job applications, track progress, and provide useful suggestions for career management.

Overall, the system architecture ensures efficient communication between the user interface, processing unit, and database, making the application reliable, scalable, and easy to manage.

## REVIEW LITERATURE:

Several researchers have studied digital recruitment systems, applicant tracking systems,

and AI-based recruitment tools to improve the efficiency of job search and hiring processes.

Many studies highlight the importance of **Applicant Tracking Systems (ATS)** in modern recruitment. An ATS is a software system that helps organizations manage job applications, track candidate information, and automate recruitment processes. These systems reduce manual work, improve organization of candidate data, and allow recruiters to filter applications more efficiently. Advanced ATS platforms also integrate technologies such as machine learning and natural language processing to analyze resumes and match candidates with suitable job roles.

Research on **job recommender systems** shows that intelligent algorithms can analyze user preferences, skills, and job requirements to provide personalized job recommendations. Common techniques used in these systems include collaborative filtering, content-based filtering, and hybrid approaches. These methods help improve the accuracy of job matching and support better decision-making for both job seekers and recruiters.

Previous work on **web-based job portals** has also focused on creating platforms where job seekers can search and apply for jobs online while recruiters manage applications digitally. These systems often include features such as user profiles, resume uploads, job posting modules, and application tracking. Such platforms improve accessibility and reduce the time and effort required in traditional recruitment processes. However, many existing systems mainly focus on automation and lack intelligent features such as advanced recommendation and career analytics.

Recent research also explores the use of **Artificial Intelligence and Natural Language Processing (NLP)** to enhance recruitment systems. AI can analyze resumes, understand job descriptions, and automatically evaluate candidate qualifications more accurately than simple keyword-based systems. AI-driven systems can also reduce bias and improve candidate selection by analyzing contextual information from resumes and applications.

Although several recruitment and job management systems have been proposed, many still face limitations such as lack of personalized feedback, poor integration with career management

tools, and limited support for tracking job applications from the job seeker's perspective. Therefore, there is a need for an intelligent system that helps users efficiently manage their job applications, monitor their progress, and organize career opportunities in a centralized platform.

### **CHALLENGES:**

The development and implementation of an **AI-Based Job Application Tracking System for Career Opportunity Management** involves several challenges that need to be addressed to ensure the system functions effectively.

#### **1. Data Management:**

Managing a large amount of job application data from different companies and job portals can be challenging. The system must store and organize information efficiently to ensure quick access and proper tracking.

#### **2. Data Accuracy and Consistency:**

Ensuring that the job application information entered by users is accurate and consistent is important. Incorrect or incomplete data may affect the tracking and analysis of job applications.

#### **3. Integration of AI Technologies:**

Implementing Artificial Intelligence features such as data analysis and smart suggestions requires proper algorithms and accurate datasets. Designing and integrating these AI components into the system can be complex.

#### **4. System Scalability:**

As the number of users and job applications increases, the system must be able to handle large volumes of data without affecting performance.

### **FUTURE DIRECTIONS:**

The **AI-Based Job Application Tracking System for Career Opportunity Management** can be further improved by adding advanced features and technologies in the future to enhance its functionality and user experience.

#### **1. Advanced AI Job Recommendations:**

Future versions of the system can include advanced AI algorithms that analyze user skills, experience, and preferences to recommend suitable job opportunities automatically.

#### **2. Interview Preparation Support:**

The system can include features such as interview tips, commonly asked questions, and AI-based mock interviews to help users prepare better for job interviews.

#### **3. Real-Time Notifications and Alerts:**

Future systems can provide real-time alerts for application updates, interview schedules, and new job opportunities based on the user's profile.

#### **4. Data Analytics for Career Insights:**

The system can provide detailed analytics about job application success rates, application trends, and career progress to help users make better decisions in their job search.

### **CONCLUSION:**

The **AI-Based Job Application Tracking System for Career Opportunity Management** provides an efficient solution for managing and organizing job applications in a structured manner. In today's competitive job market, candidates often apply to multiple companies, which makes it difficult to track application status, interview schedules, and important deadlines. This system helps overcome these challenges by providing a centralized platform where users can easily store, manage, and monitor their job applications.

The system simplifies the job search process by allowing users to record job details, update application status, and manage career opportunities effectively. The integration of Artificial Intelligence can further enhance the system by analyzing data and providing useful insights that help users make better career decisions.

Overall, the proposed system improves organization, saves time, and increases efficiency in managing job applications. It supports job seekers in staying updated with their applications and helps them focus on better career planning. With further improvements and additional features

in the future, this system can become a powerful tool for job seekers to manage and track their career opportunities successfully.

## REFERENCES:

1. D. Ramesh and S. Kumar, “AI-Powered Applicant Tracking System: An Intelligent Approach to Modern Recruitment,” *International Journal for Research in Applied Science and Engineering Technology (IJRASET)*, 2023.
2. M. Singh and A. Sharma, “Web-Based Job Portal System for Recruitment Management,” *International Journal of Engineering Research and Technology (IJERT)*, 2021.
3. J. Smith and L. Brown, “Machine Learning Techniques for Job Recommendation Systems,” *Journal of Big Data*, Springer, 2022.
4. P. Gupta and R. Mehta, “Development of Online Recruitment Management System,” *International Journal of Computer Applications (IJCA)*, 2020.
5. S. K. Patel, “Artificial Intelligence in Recruitment and Talent Acquisition,” *International Journal of Advanced Computer Science and Applications (IJACSA)*, 2022.
6. I. Sommerville, *Software Engineering*, 10th Edition, Pearson Education, 2016.
7. T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, *Introduction to Algorithms*, MIT Press, 2009.