# AI-Based Resume Screening Using ATS

## Introduction

In the current recruitment landscape, the use of Artificial Intelligence (AI) for automated resume screening has become a standard practice.   
Applicant Tracking Systems (ATS) help recruiters handle large volumes of applications by filtering and ranking candidates based on job requirements.

## Background

The growth of AI in HR technology has been driven by the need for efficiency, fairness, and better hiring decisions.   
Traditional manual screening is time-consuming, whereas AI-based ATS tools use natural language processing (NLP) and machine learning (ML) to quickly identify relevant resumes.

## Technical Background

AI-powered ATS relies on algorithms trained on historical hiring data, skills taxonomy, and keyword matching.   
Natural Language Processing (NLP) techniques, such as tokenization, stemming, lemmatization, and semantic analysis, are applied to parse resumes and job descriptions.

## Key Concepts

1. Natural Language Processing (NLP)  
2. Keyword Extraction  
3. Cosine Similarity  
4. Machine Learning Ranking Models  
5. Applicant Tracking Systems (ATS) Integration

## Supporting Examples and Diagrams

For example, a Python-based model can compare a candidate's resume with a job description using cosine similarity.  
[Diagram Placeholder: Flowchart showing ATS process from resume upload to ranking output]

## Problem Definition Statements

Recruiters face the challenge of identifying top candidates quickly while avoiding bias and ensuring compliance with hiring laws.  
The problem is to design an AI model that can rank resumes accurately and integrate seamlessly with existing ATS platforms.

## How ATS Screening is Used

The ATS parses resumes, extracts keywords, matches them with job requirements, scores them, and ranks candidates accordingly.  
Recruiters then review the top-scoring candidates for interviews.

## Interpretation of Results

The ranking score represents how closely a resume matches the job description.   
A higher score indicates a stronger alignment between the candidate’s qualifications and the job requirements.

## Current Industrial Application Scope of References

Many companies use AI-driven ATS platforms such as Greenhouse, Lever, and Taleo.   
These systems are widely adopted in technology, finance, healthcare, and manufacturing industries to streamline hiring.

## References (IEEE Format)

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