ALBUKHARY INTERNATIONAL UNIVERSITY

SCHOOL OF COMPUTING AND INFORMATICS

FYP2 PRESENTATION

AIU Smart Resume Analyzer

GROUP 3

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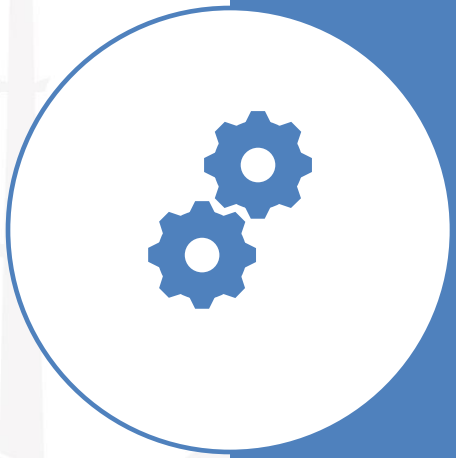

INTRODUCTION

Smart Resume Analyzer is an AI-powered tool that automatically reads, interprets, and evaluates resumes to identify key qualifications .

Manual resume screening is inefficient, subjective, and often overlooks qualified candidates.

AIU seeks an intelligent solution to improve recruitment effectiveness.

PROBLEM STATEMENT

- Manual Traditional System Inefficiencies.
- Incomplete Information Analysis and Administrative Burden.
- Poor Candidate Communication and Experience.
- Time-Consuming File Management Process.

Research Questions - Research Objectives

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Research Questions

1.What are the limitations and challenges of the existing system framework in accurately analyzing resumes for skills, qualifications, and relevant experiences based on job descriptions?

2.How well does the resume analyzer help reduce hiring bias, based on feedback from HR and system reviews at AIU?

3.How can we create a secure and user-friendly dashboard to help HR quickly see and manage resume data for better hiring ?

Research Objectives

1.To study the existing system framework that can automatically analyze resumes to identify key skills, qualifications, and relevant experiences based on resumes.

2.To design and develop a resume analyzer for AIU HR personnel using NLP tools.

3.To build a secure, interactive dashboard for HR to visualize and manage resume analytics for faster, efficient, and accurate data-driven hiring decisions.

2. Literature Review

A. Sinha et al. (2024) used **BERT** for named entity detection and an **NLP pipeline** to extract data from resumes. However, the system struggles with processing unstructured data, highlighting the need for more advanced methods.

Arlene Casey et al. (2024) proposed a system that uses **NLP** to suggest personalized training paths for job seekers. The system lacks the ability to offer personalized skill recommendations based on resume analysis.

Ms. Sophiya Sugantha Grace M et al. (2024) used **text mining**, **sentiment analysis**, and **TFIDF** to automate screening. The study recommends exploring advanced deep learning techniques and novel layout concepts for better performance.

Sakshi & Prakash (2024) applied **NLP** to rank resumes. The research identifies a gap in transparency, as the system does not explain why certain candidates match specific jobs.

Ms. Y. Sowjanya et al. (2023) combined **NLP pipelines** and **machine learning** for parsing. The system needs to adapt to various industries and resume formats to be more effective.

Khaire (2021) developed an automatic **resume reading tool** using **NLP**. The system lacks flexible evaluation rules across different industries, emphasizing the need for industry-specific solutions.

2.Literature Review

Based on the reviewed of **30 related papers**, the summary, gaps and weaknesses in **existing systems** were identified:

1. **Lack of robust NLP-based resume parsing**: Many systems fail to accurately parse and structure data from **unstructured resume formats**, indicating a need for **advanced NLP-powered parsing**.

2. **Opaque ATS scoring systems**: Many ATS platforms rely on **generic scoring** without providing transparency about the specific factors contributing to the score, highlighting the need for more transparent **ATS scoring methods**.

3. **Insecure authentication protocols**: **Resume analyzers** often lack **secure login** mechanisms and use **basic form-based authentication**, which points to a gap in robust **authentication systems**.

4. **Ineffective skill gap detection**: Existing systems do not personalize skill gap detection, failing to match candidates with **customized skill training** recommendations based on detailed job requirements.

3.METHODOLOGY

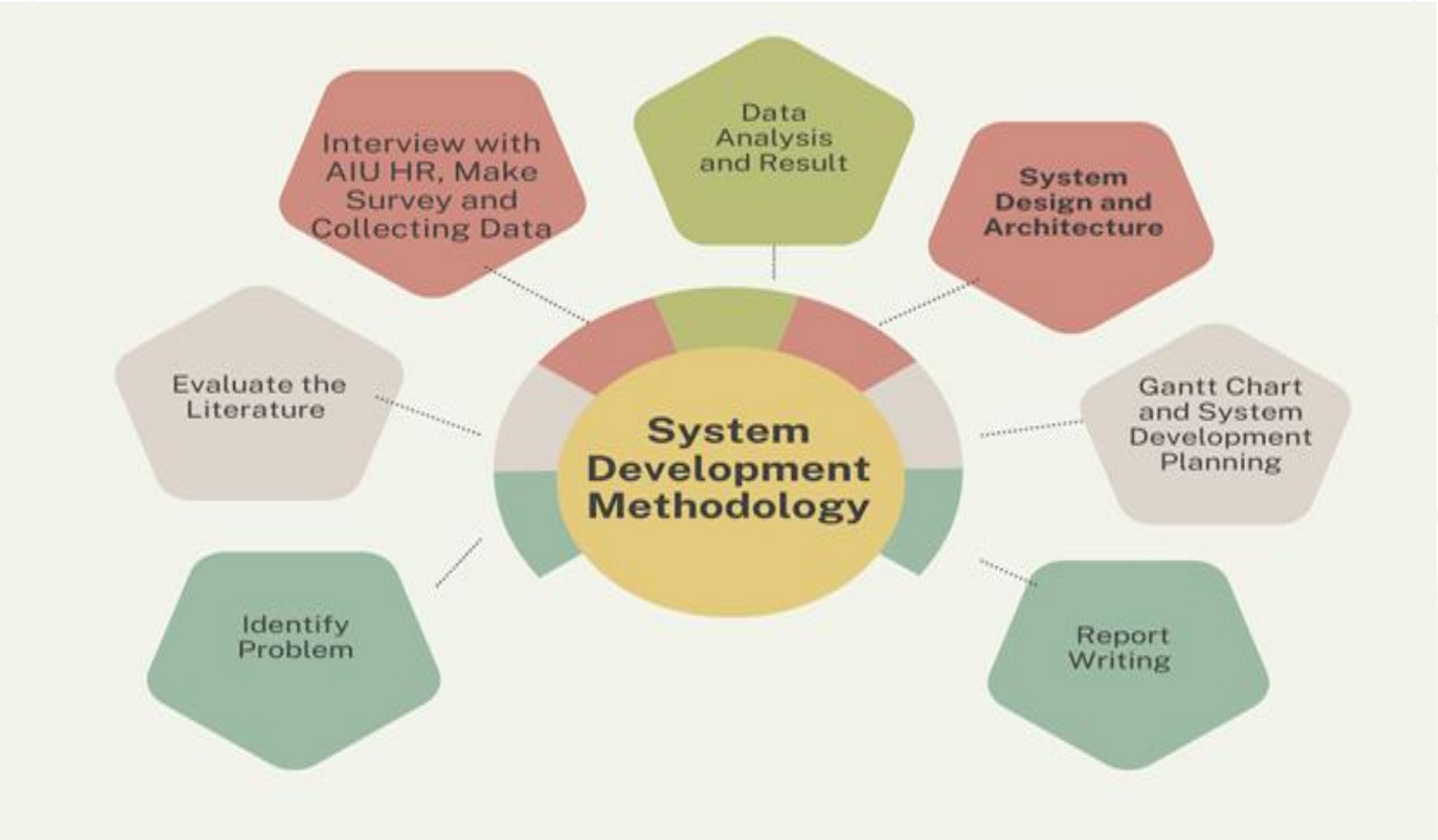

Figure: System Development Methodology

SYSTEM ARCHITECTURE

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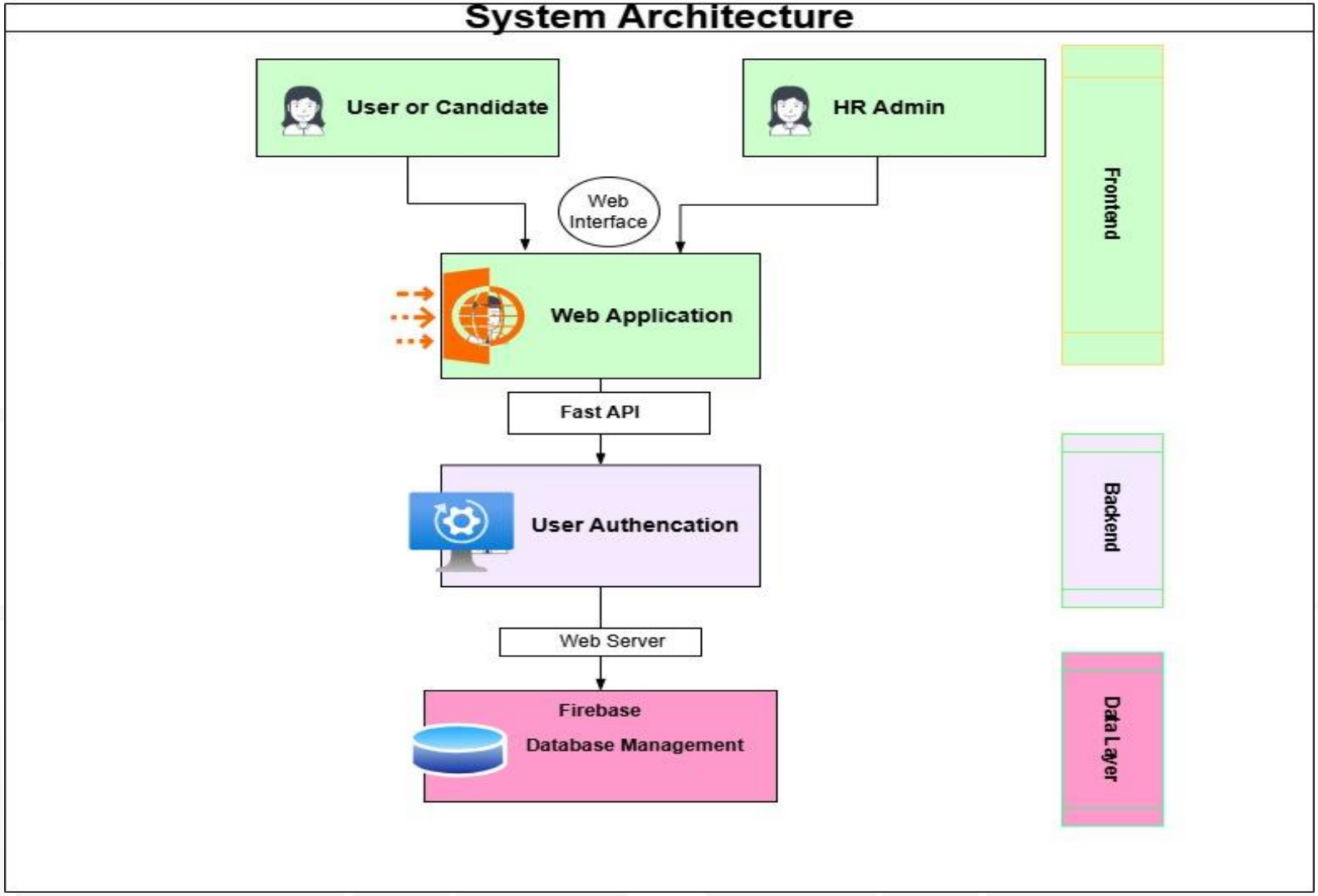

Figure: System Architecture

RESUME PRESONALITY INSIGHTS

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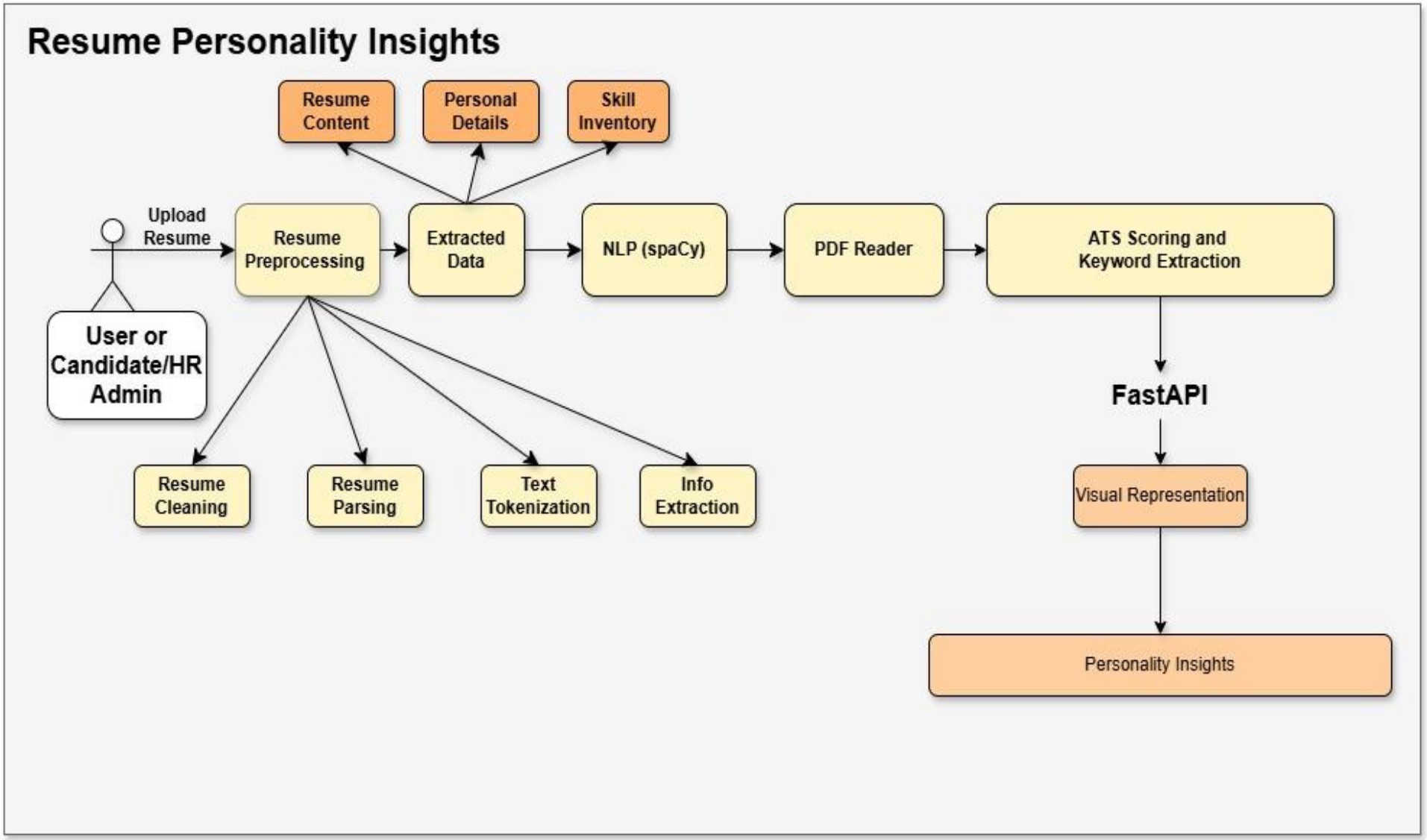

Figure: Resume Personality Insights

Use Case Diagram

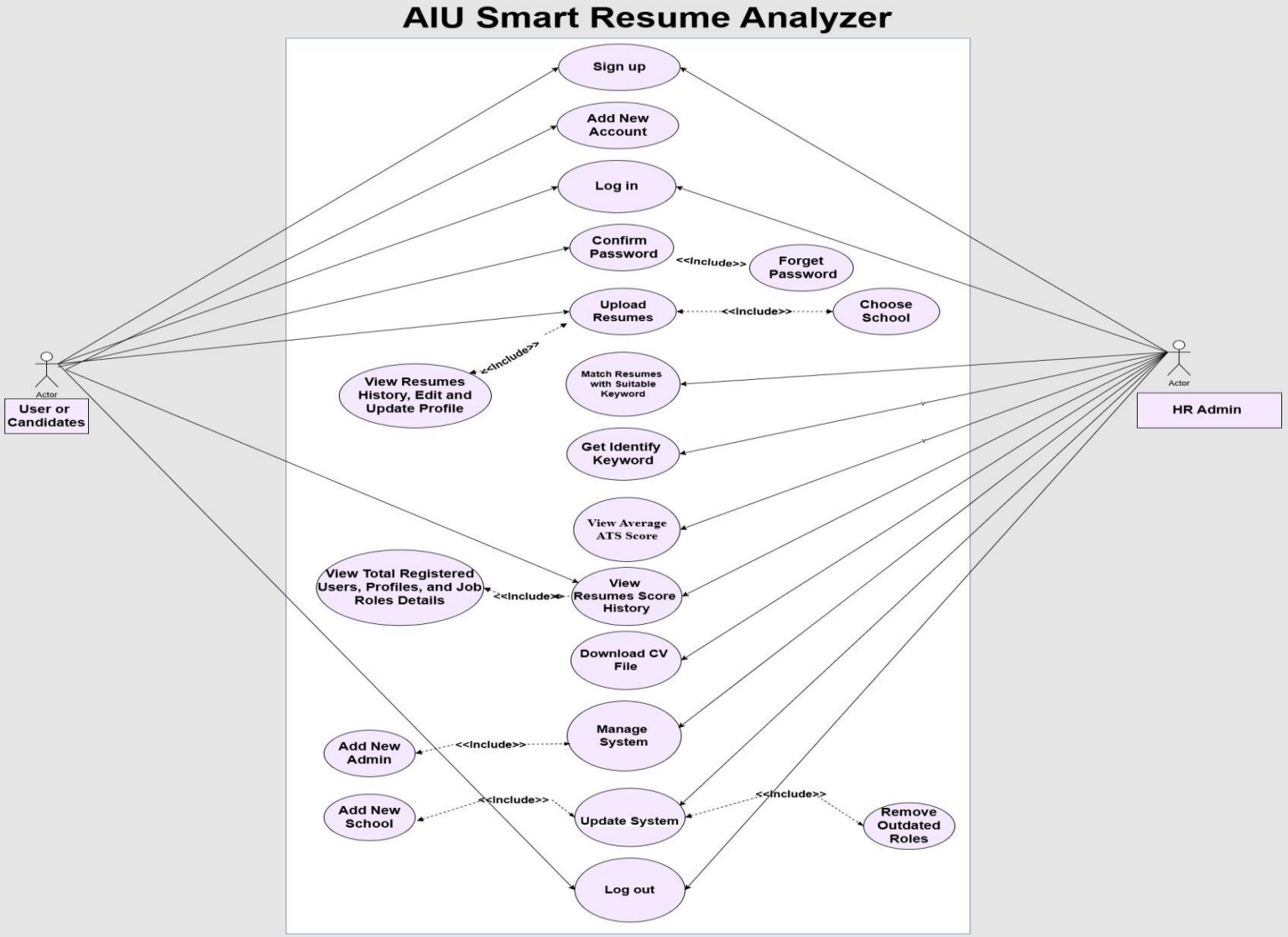

Figure: Use Case Diagram

Activity Diagram

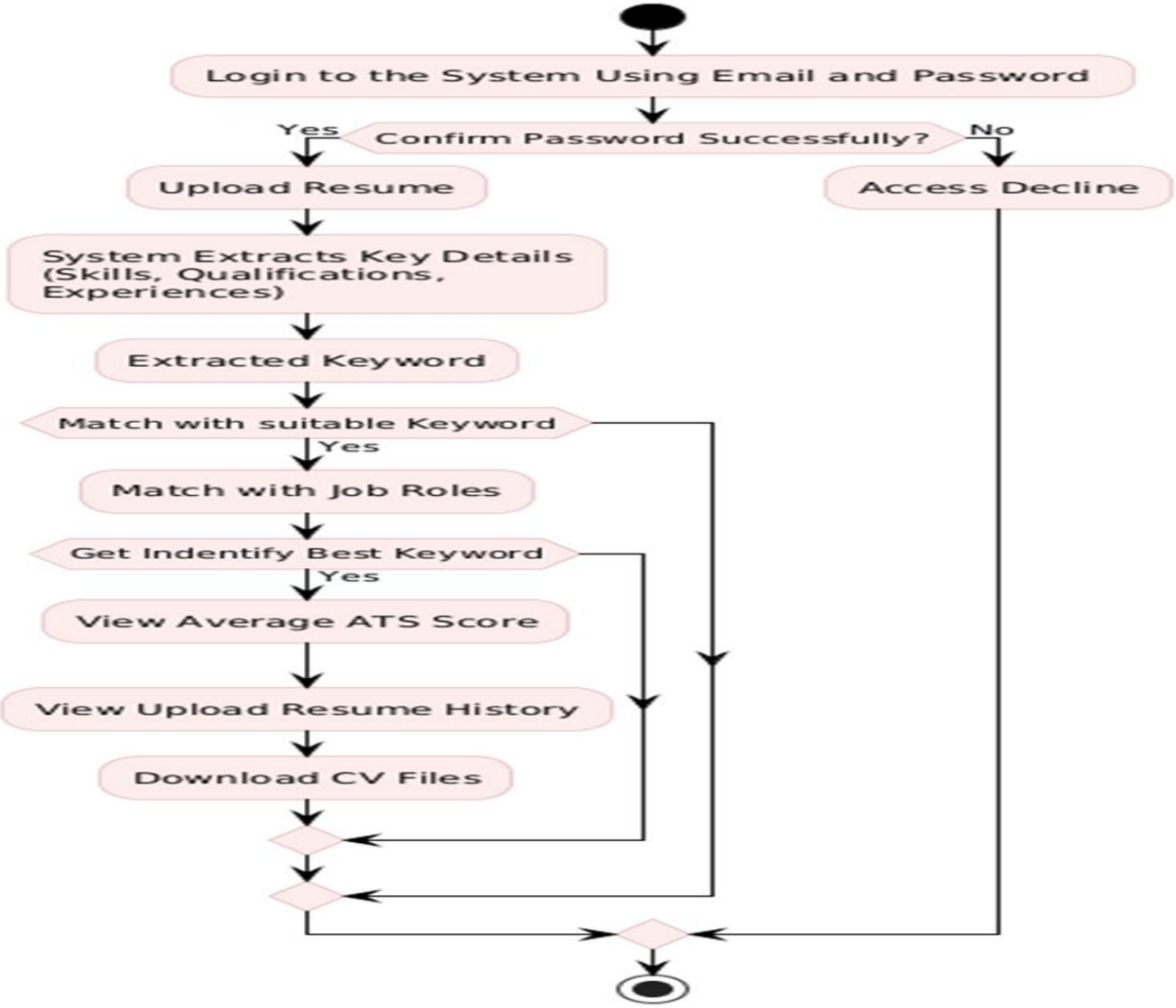

Figure: Activity Diagram

SOFTWARE REQUIREMENTS

Frontend: HTML, CSS, JavaScript .

Backend: Fast API, NLP,Python

Database: Firestore (NoSQL), Firestore Admin

Modules:PDF Resume Parser using PDF Miner, NLP with spaCy (Model) for keyword matching, JSON Web Tokens(JWT)-secured login/authentication

Cloud Services: Firebase Authentication, Firebase Cloud Storage, Google Cloud Platform

HARDWARE REQUIREMENTS

Hardware	Purpose/Interpretation
Development Workstations	Multi-core processors (e.g., Intel i7 or AMD Ryzen 7), minimum 16GB RAM, SSD for fast data access and storage
Backup and Redundancy Systems	Ensures stable connectivity and includes backup storage to safeguard data.
Network Equipment	Routers, switches, and network cables for stable connectivity; includes backup storage solutions

FUNCTIONAL REQUIREMENTS

Requirement	Actor	Action
Sign up and log in with email and password	User	Sign up / log in
Reset forgotten password via email link	User	Reset password
Edit User Profile details	User	Edit profile
Select schools of interest	User	Choose preferences
Upload resume in PDF format	User	Upload resume
Notify user of successful CV delivery	System	Send confirmation of Successful Uploaded Resume

FUNCTIONAL REQUIREMENTS

Requirement	Actor	Action
Track resume status (opened/analyzed)	User	View resume status
Secure admin login	Admin	Log in
View users, resumes, and job roles	Admin	View system data
Monitor resume analysis & ATS compatibility	Admin	Track analytics
Add new admin accounts	Admin	Manage admin access
Extract skills, qualifications, and experience from resumes	System	Auto-scan resumes

Project Timeline in Gantt Chart Format

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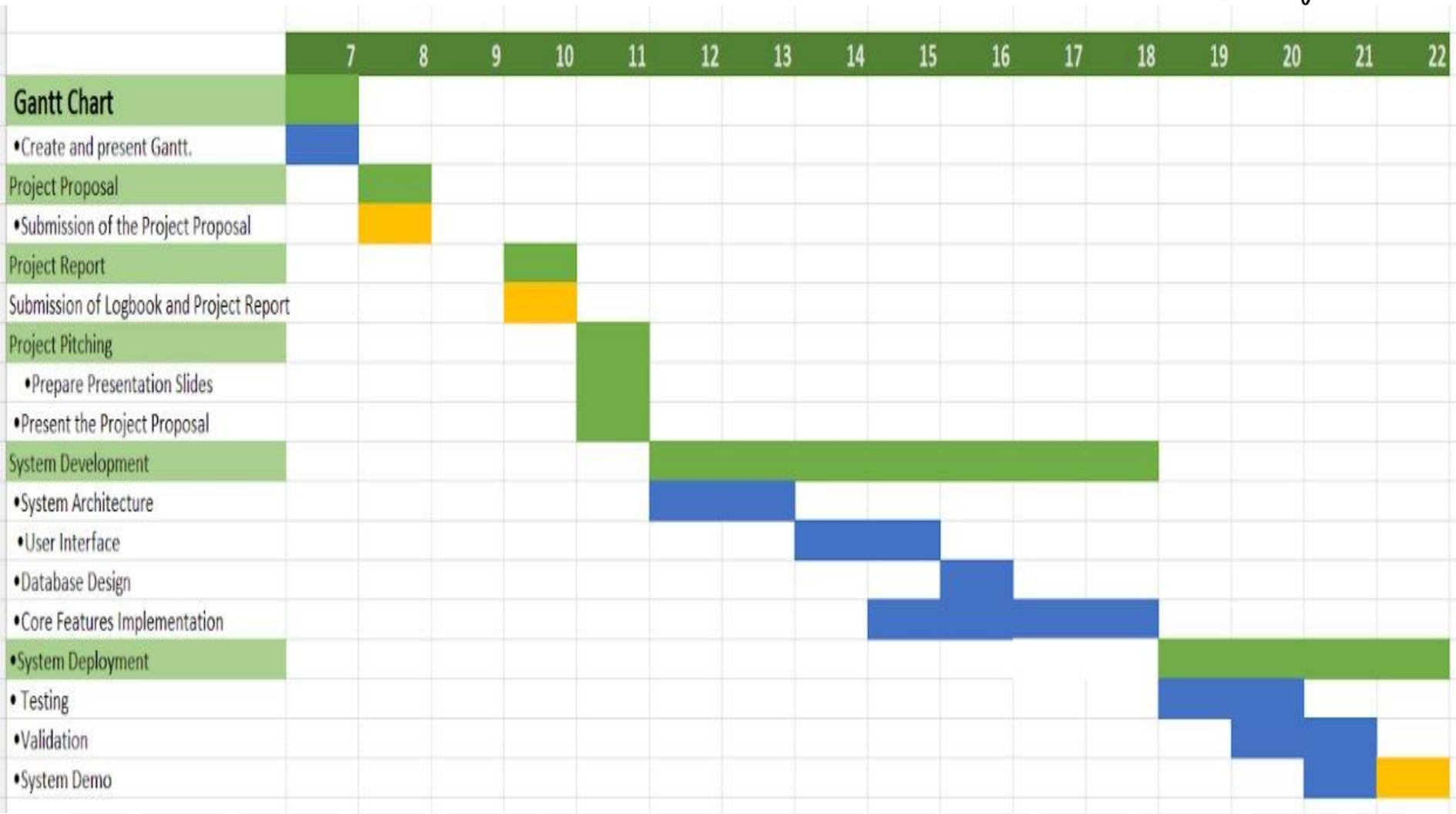
AIU Smart Resume Analyzer

Total Weeks	START DATE	END DATE
28	10/28/24	06/15/25

Duration
Process
Milestone

NO	project Activities	1	2	3	4	5	6	7	8	9
1	**Selection of Project Title**									
1.1	•Submission of Registration Form									
1.2	•Attend the Project Workshop									
2	**Planning and Introduction**									
2.1	• Define Problem Statement									
2.2	• Define Research Questions									
2.3	• Define Research Objectives									
2.4	•Determine System Outline									
2.5	•Determine System Outline									
2.6	•Finish the First Chapter									
3	Literature Review									
3.1	•Conduct Gather literature									
4	Requirement Engineering									
4.1	•Conduct Interviews									
4.2	•Send the survey and analysis									
4.3	•Hardware and Software requirement									
4.4	• Functional, Non F Requirements									
5	Methodology									
5.1	•Define project approach and methods.									
6	System Design									
6.1	•System Architecture Design									
6.2	•Create Use Case Diagram									
6.3	•Develop Sequence Diagram									
6.4	•Create Activity Diagram									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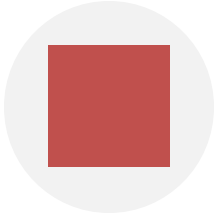
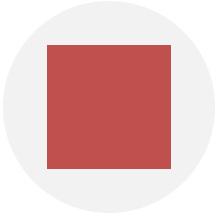
Gantt Chart
•Create and present Gantt.
Project Proposal
•Submission of the Project Proposal
Project Report
Submission of Logbook and Project Report
Project Pitching
•Prepare Presentation Slides
•Present the Project Proposal
System Development
•System Architecture
•User Interface
•Database Design
•Core Features Implementation
•System Deployment
• Testing
•Validation
•System Demo

4. Results and Analysis

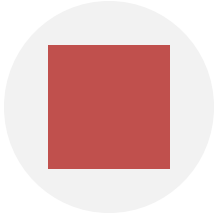
1.System Implementation (User Interface Design)



2. Admin Functionality



3. Testing Results



4.Future Work

User Interface Design

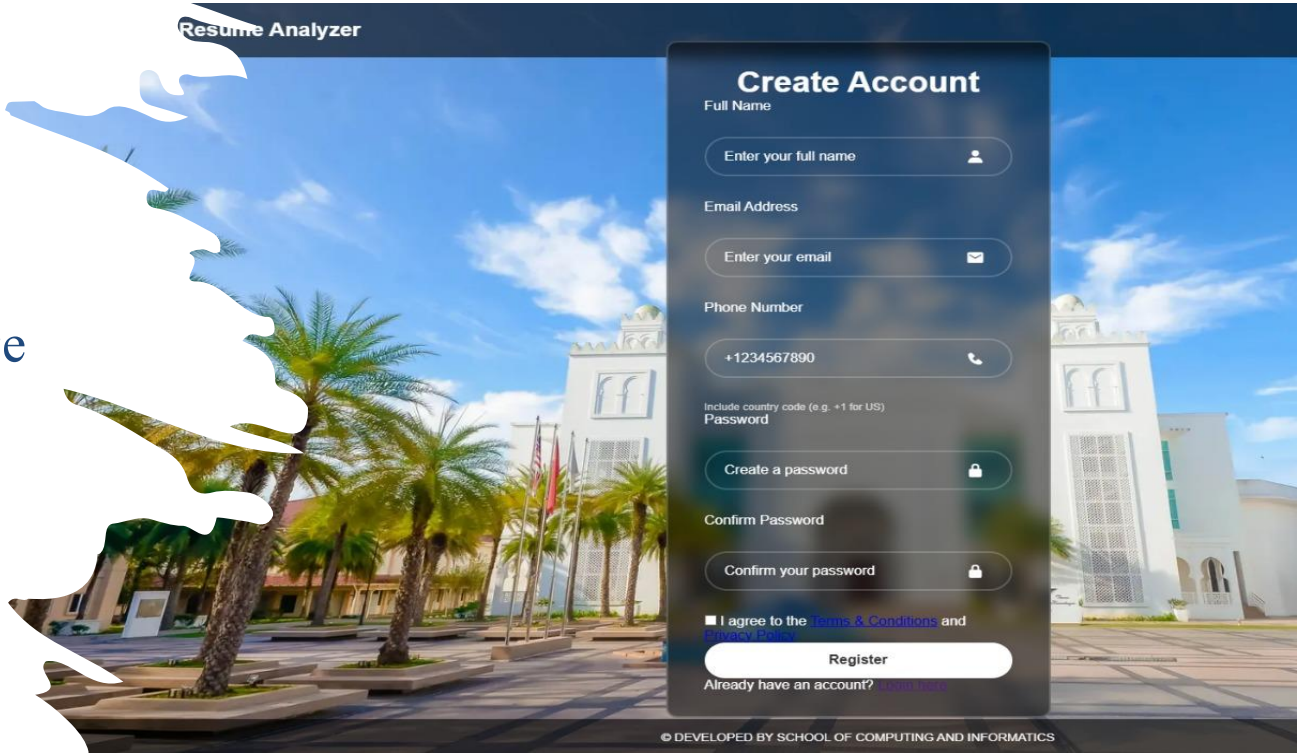


Figure 1 : Registration Page

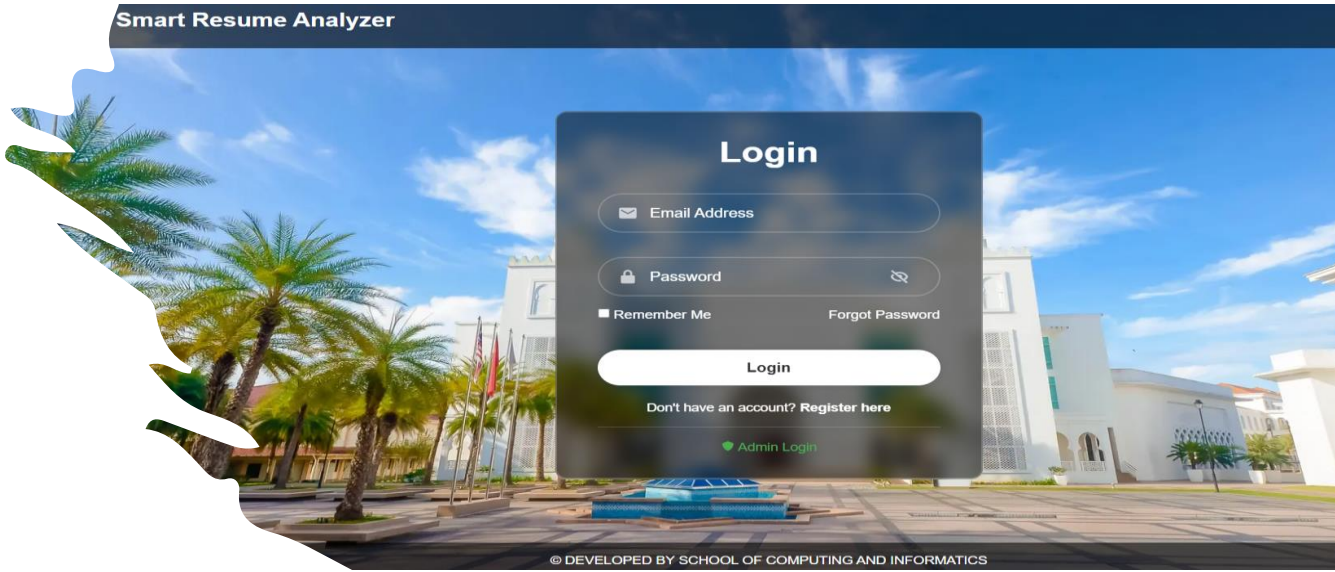


Figure 2 : Login Page

Forgot the Password

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Figure 3 : Password Reset Request

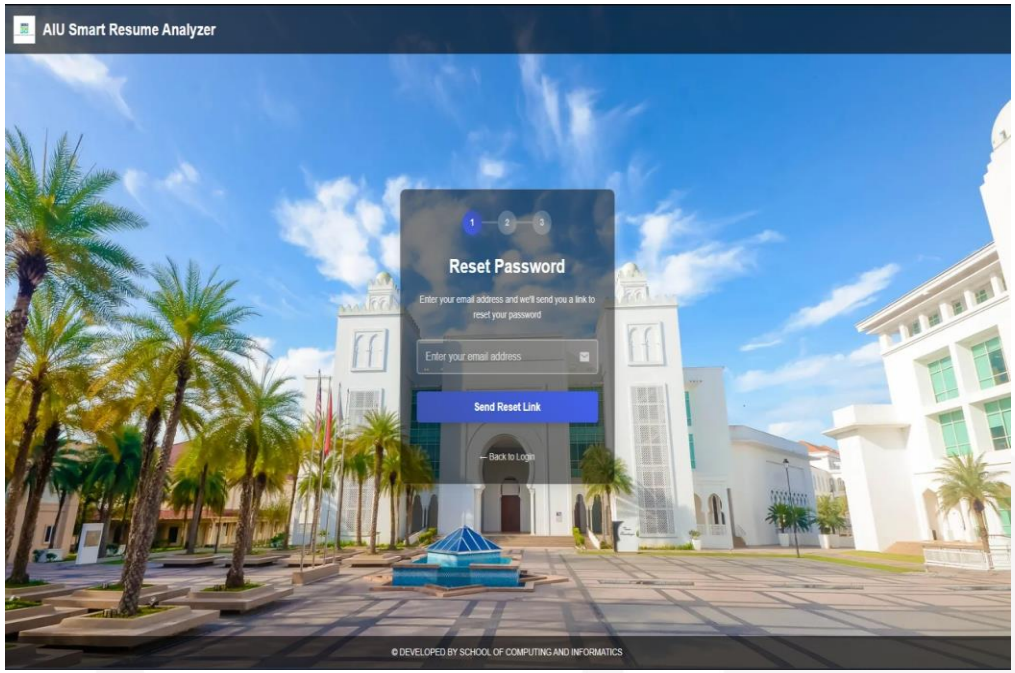


Figure 4 : Check Email Page

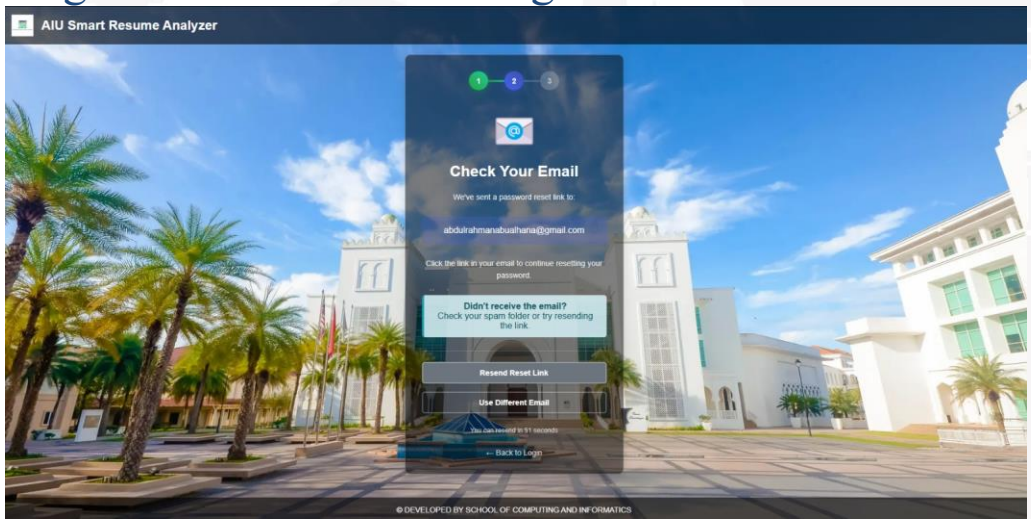


Figure 5 : Set New Password Page

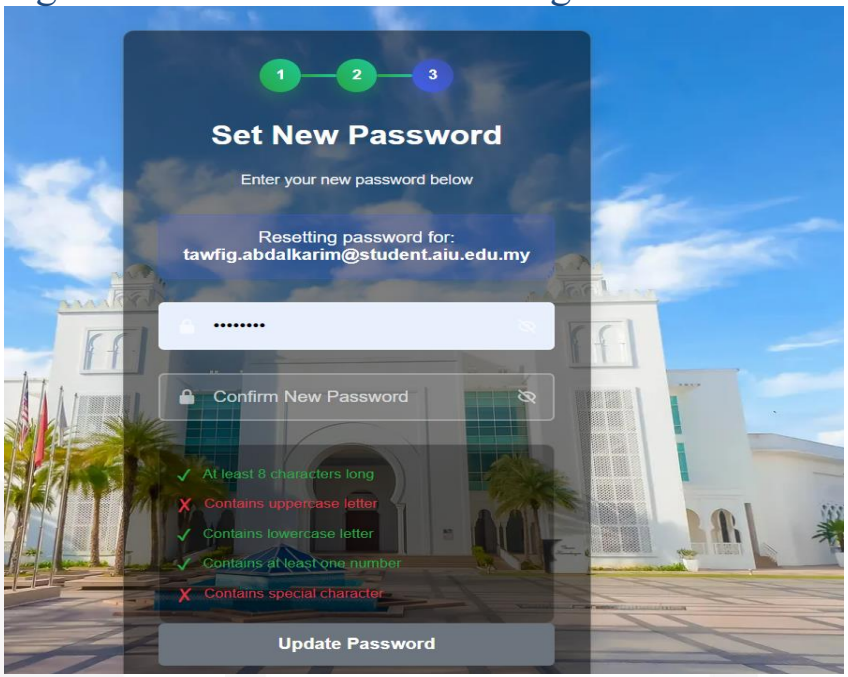
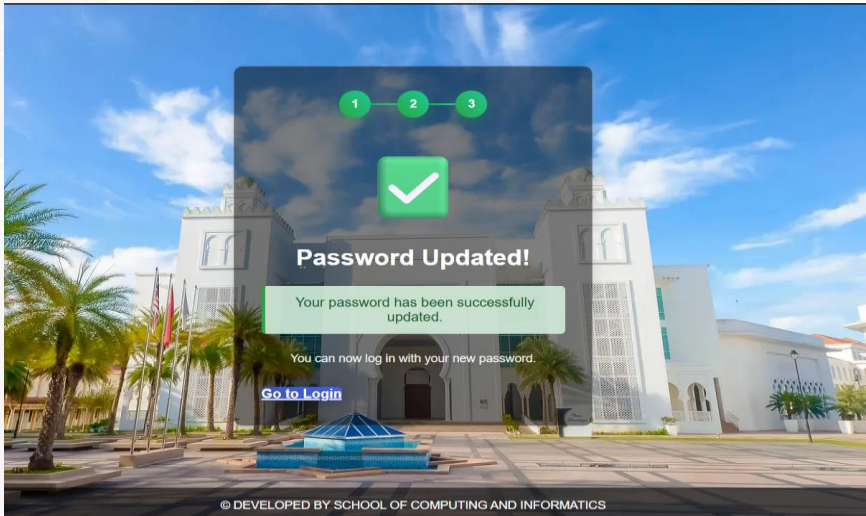


Figure 6 : Password Successfully Updated Page



User Account

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Figure 7: User Profile Editor

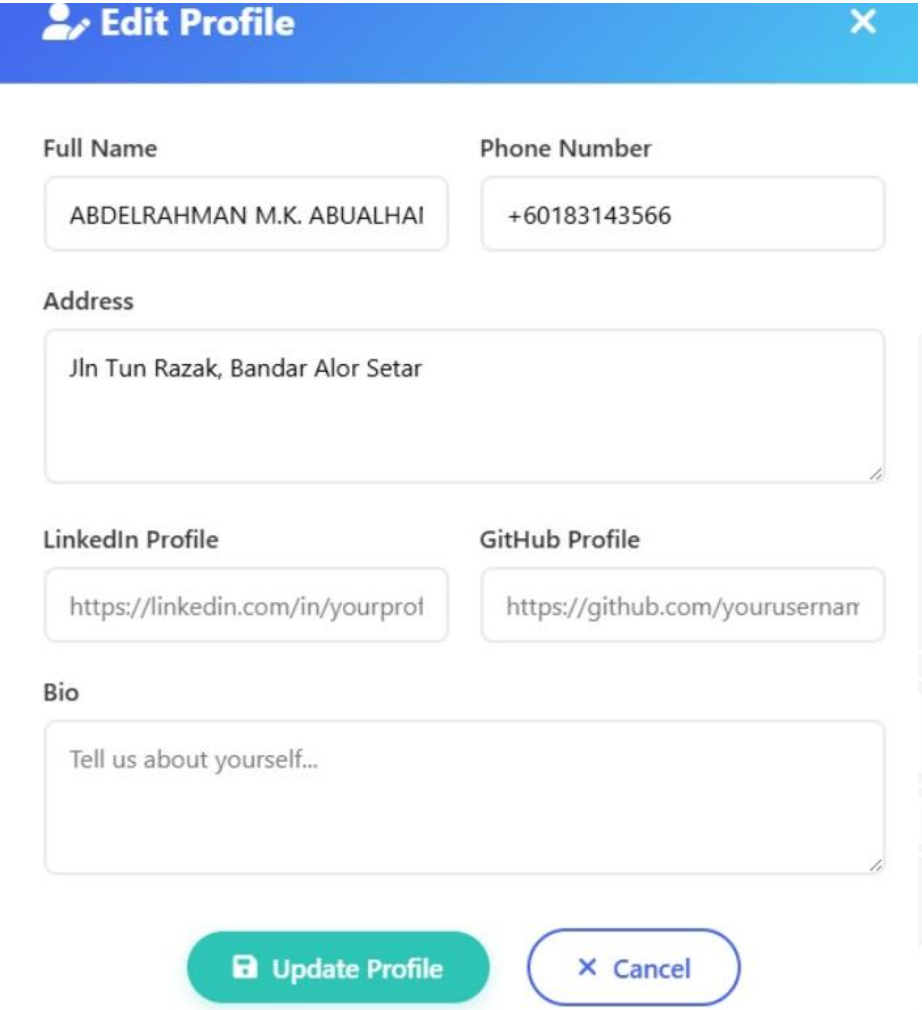
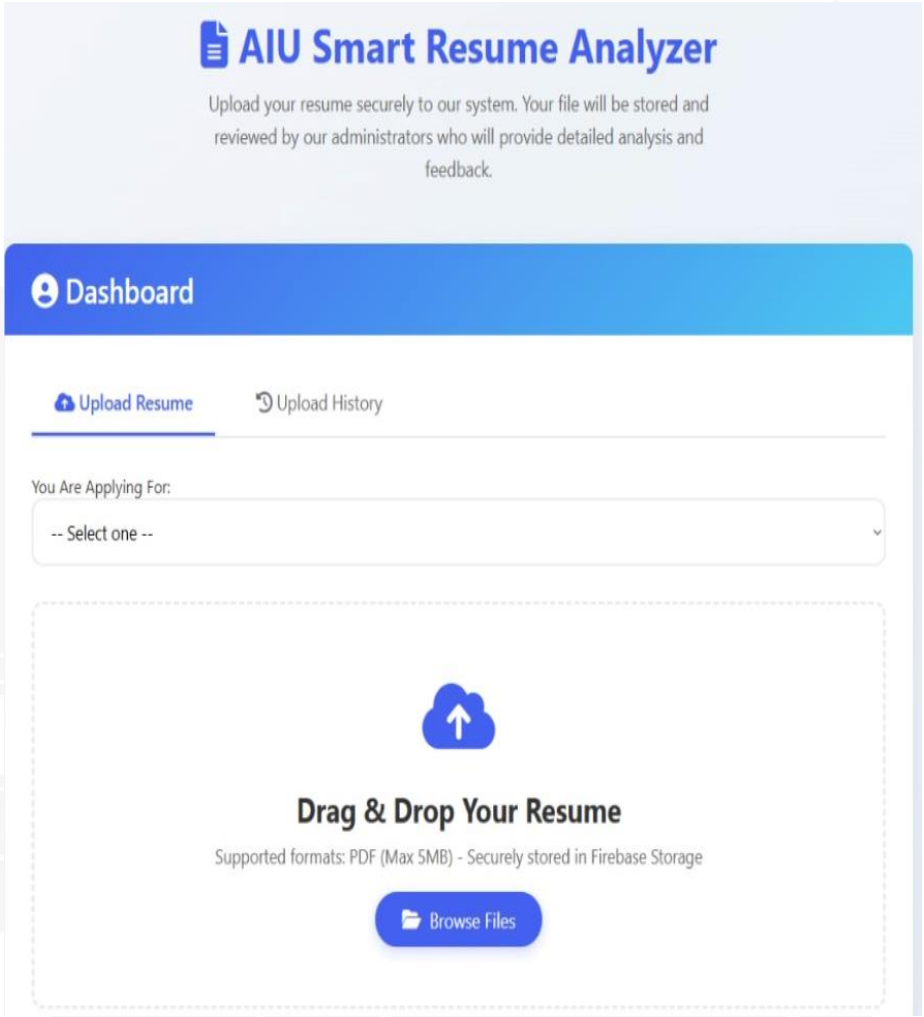


Figure 8: User Resume Upload



Resume Submission Confirmation

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Figure 9 : Resume Submission Confirmation

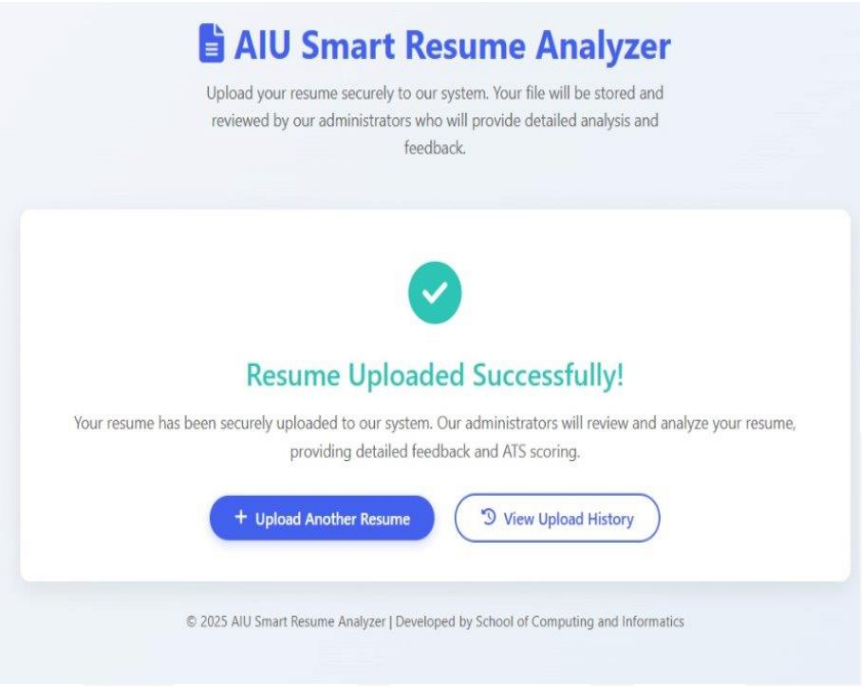


Figure 10 : Uploaded Resume History

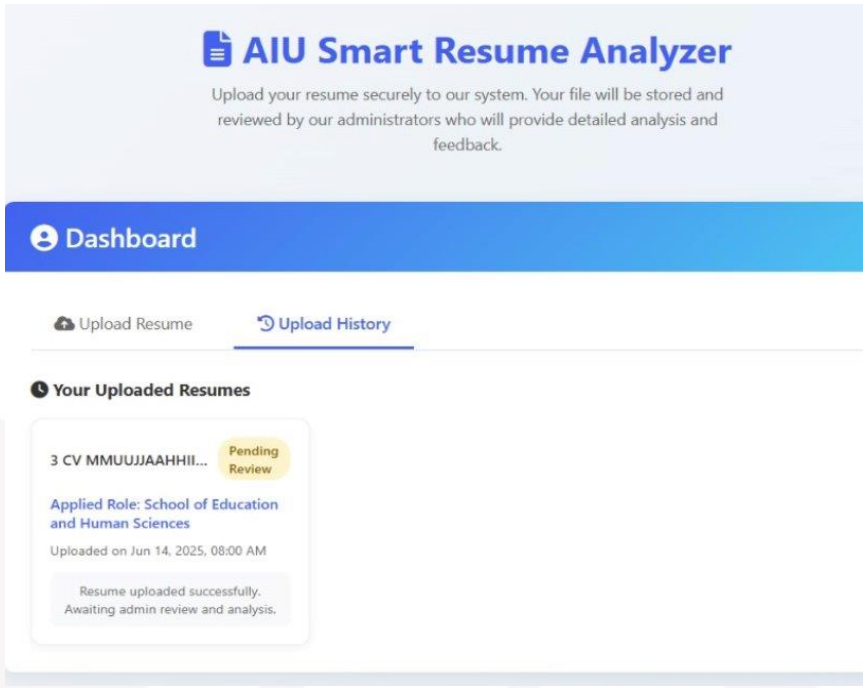
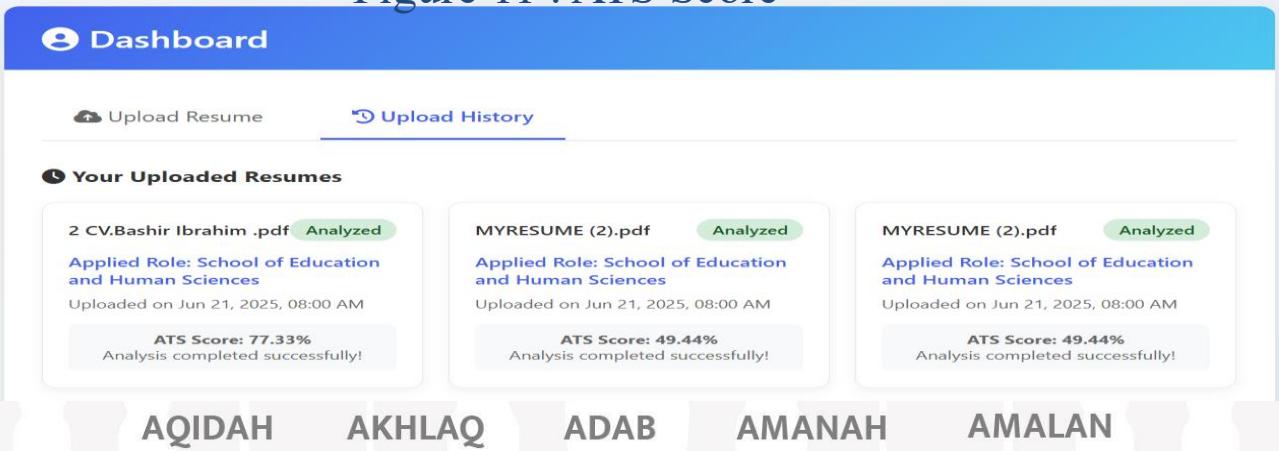
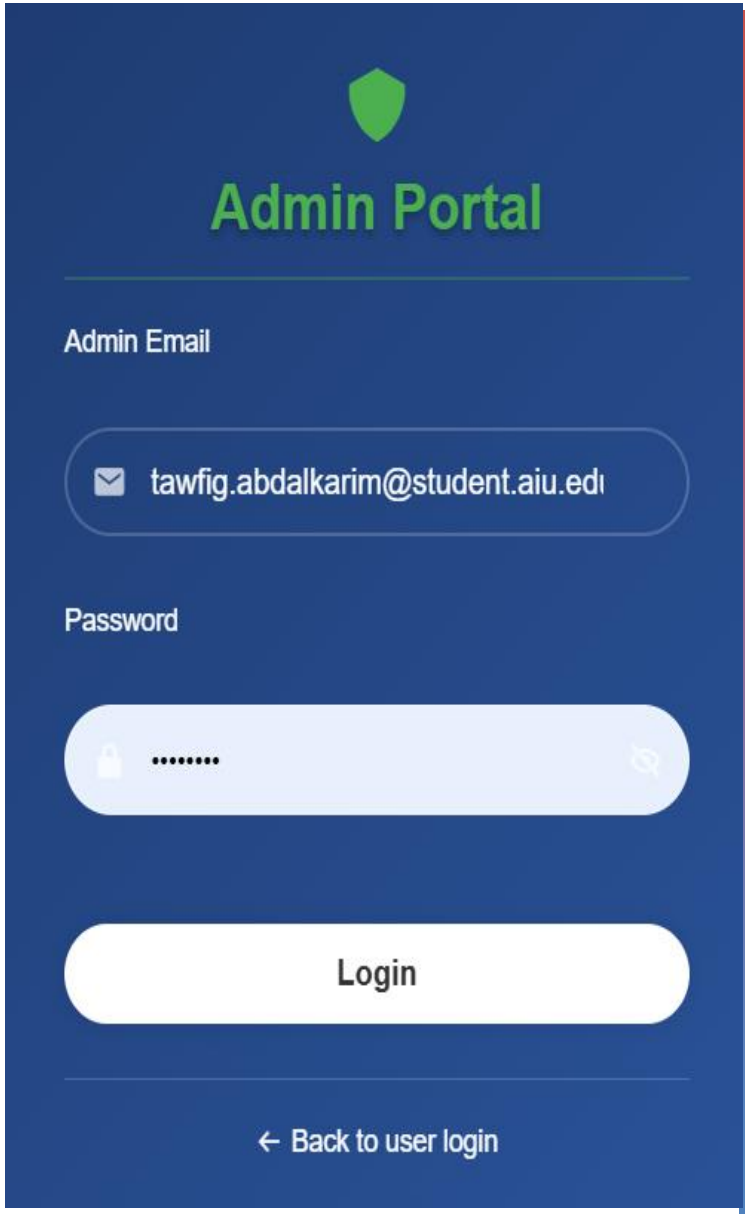


Figure 11 : ATS Score



Admin Functionality (HR)



1. Admin Dashboard – System Overview
Shows real-time stats: users, resumes uploaded/analyzed, and average ATS scores.

2. Resume Management
Admins can view, download, or delete resumes with full candidate details.

3. Resume Analyzer
Runs ATS analysis with scores, keyword match, and suggestions.

4. Admin Accounts Management
Create or delete admins; view their details and activity logs.

ATS System Scoring Framework

Category	Max Points	Keywords	Assessment Purpose
Technical Skills	10	LMS, Moodle, Blackboard, management, E-learning platforms, SPSS, Statistical software, Excel, Microsoft Excel,Microsoft Office, Qualitative analysis, Research methodology,Teaching tools, Academic software, Learning analytics.	Evaluate technical competency
Soft Skills	15	Communication, Leadership, Teamwork, Adaptability, Problem-solving .	Assess interpersonal abilities
Language Proficiency	10	English	Evaluate language readiness
Achievements	5	Research grants, Employee recognition, Dean's list, Competition achievements, Certifications.	Identify exceptional performance
Sections Presence	25	Education, Skills, Experience sections	Check resume structure
Candidate Profile	15	Full Name, Email, Phone, Address, LinkedIn	Verify contact completeness
Work Experience	10	University lecturer, Professor role, Course development, Lecture preparation, Student mentorship, Research supervision, Teaching assistant, Administrative experience, Technical support, Project management, Office management, Data analysis, Systems administrator, Technical documentation .	Measure professional background
TOTAL	100	**Complete evaluation system**	**Overall candidate assessment**

Testing Results

Performance Comparison:

- **Success Rate**: Based on the ATS scoring results >90% accuracy in skill-based matching
- **Admin Feedback**: Positive usability response from the AIU HR Administrators

Features Delivered:

- ATS Report Generator
- User/Admin Roles with Role-Based Access

ATS Scoring Results Table

Candidate Name	ATS Score	Recommendation
Candidate A	83.8%	Will Get the Interview Call From HR
Candidate B	47.1%	Will not get the Interviews call form The HR

Future Work

1. Candidate Position Prediction Level module
2. Resume visualization and downloadable ATS reports
3. AI career mentor via LLM
4. University-wide integration with AIU recruitment portal
5. Multilingual support and personalized resume tips
6. Candidate Level Prediction module

5. Conclusion

The AIU Smart Resume Analyzer improves recruitment by using NLP and secure data practices to automate resume screening and reduce bias. To facilitate recruitment decision making.

The system is efficient, scalable, and supports career growth through accurate job matching and an interactive dashboard.

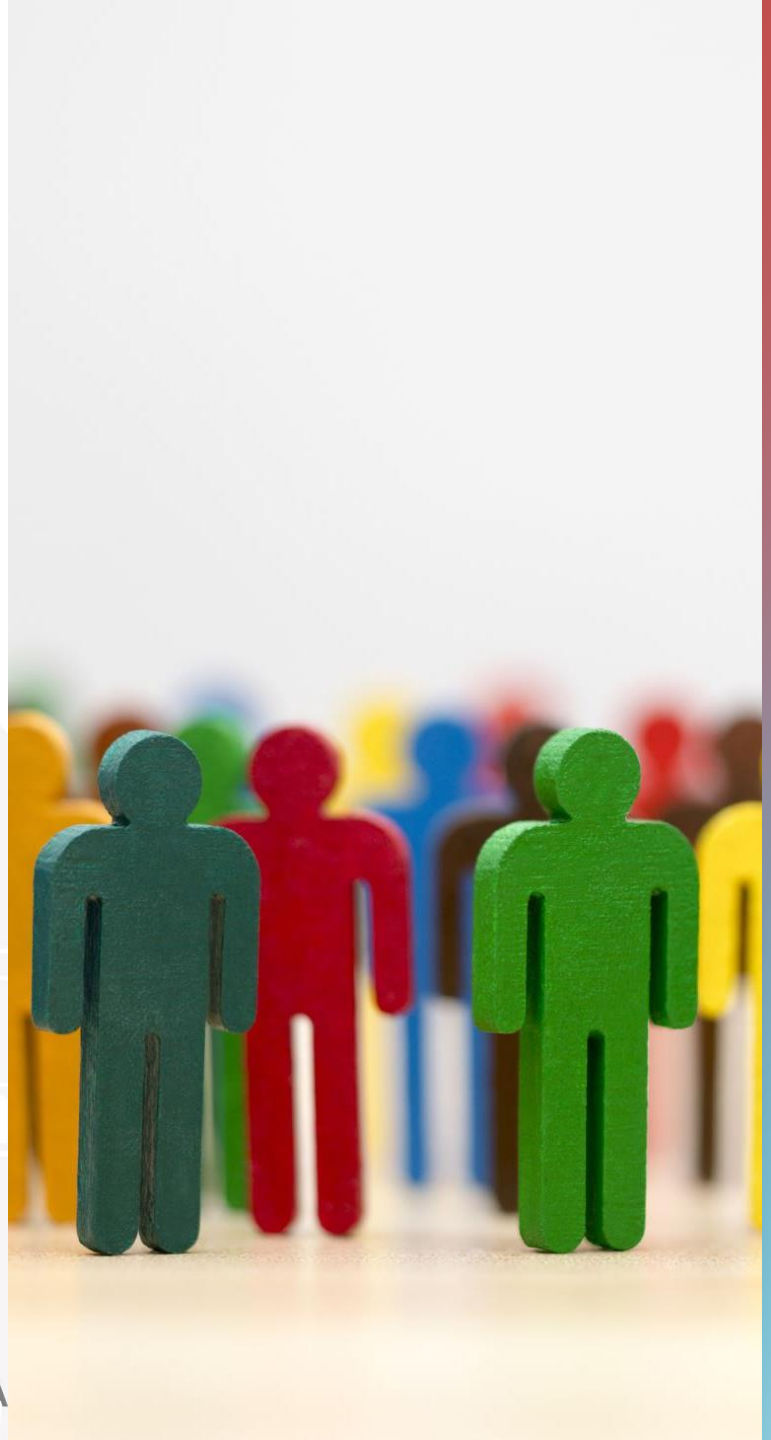
Future improvements should include advanced AI for deeper analysis, a super admin for better management, and integration with the AIU website for easier access by students and external users.

6. Contribution to Social Business

- **UN SDG Goal 8 (Goal 8: Decent Work and Economic Growth)**:
  Helps hire the right and skilled people, improving productivity and supporting economic growth.

- **UN SDG Goal 5 (Gender Equality)**:
  Supports fair hiring by focusing on skills, not gender or background, to reduce bias.

- **Digital Sustainability**:
  Promotes ethical and inclusive use of AI in recruitment, supporting sustainable social and economic development.



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Q & A

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Thank You

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