



SOFTWARE ENGINEERING PROGRAM
SWENG 894 – CAPSTONE EXPERIENCE

Team 2

Software End-User Manual

11 August 2024

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1. Product Overview

1.1 Introduction

- Brief overview of the software product

The Automated Resume Screening Tool is designed to integrate seamlessly with existing HR workflows and will be scalable to accommodate different organizational needs; delivering a reliable, efficient, and user-friendly platform that empowers HR teams to make more informed and timely hiring decisions.

- Explanation of the purpose and key functionalities of the application

Tasks of recruiters and other employees from the Human Resources department involve identifying potential candidates for open organizational positions based on their submitted resumes. The volume of resumes that require scanning by Human Resources employees can be overwhelming, especially in Small to Medium Enterprises (SMEs).

Automated Resume Screening Tool enhances the process of identifying candidates based on resumes submitted to job postings by developing an Automated Resume Screening Tool that will increase efficiency and accuracy.

- Overview of the target users and what they can achieve with the software

The Automated Resume Screening Tool will leverage advanced natural language processing technologies to intelligently analyze, categorize, and rank job applicant resumes based on relevant skills and experiences. By automating the initial stages of the resume review process, our solution aims to significantly reduce the manual effort involved in candidate screening, allowing HR professionals to focus more on engaging with potential hires rather than sifting through vast quantities of applications.

The target audience for our Automated Resume Screening Tool includes human resources professionals who are directly involved in the hiring process and will benefit from this tool by reducing the time and effort required to screen large volumes of resumes, allowing them to focus more on engaging with qualified candidates.

1.2 List of Tools, Frameworks, and Services

- Comprehensive list of all tools, frameworks, and services required to run the system

Tool	Why Chosen	How Used
VS Code	Robust features, including IntelliSense, debugging, and extensive plugin support.	Primary IDE for writing, debugging, and managing code in TypeScript and Python.
Jira	Excellent for agile project management with integration support for CI/CD tools.	Tracked user stories, tasks, and sprints to manage workflows and ensure project alignment.
GitHub	Industry-standard for version control with strong collaboration features.	Hosted the source code, facilitated branching, pull requests, and code reviews.
Babel	Compiles TypeScript/JavaScript ensuring compatibility with older browsers.	Compiled modern JavaScript and TypeScript into widely supported formats.
Jest	Simple, integrated testing framework with great support for React and TypeScript.	Used for unit testing front-end components and generating coverage reports.
Cypress	Easy setup for end-to-end testing with powerful debugging and real-time reloads.	Automated functional and integration testing simulating user interactions with the application.
GitHub Actions	Automates workflows directly from GitHub, supporting CI/CD tasks.	Managed automated testing, deployments, and releases in response to GitHub events.
IndexDB	Provides fast, flexible NoSQL data storage with cloud-based scalability.	Stored structured resume data for efficient access and analysis by the application.

2. Deployment Instructions

2.1 Instructions to Download and Install Tools

- The Automated Resume Screening Tool is a web-based application, therefore, installation of a specific software is not required.

2.2 Instructions for Environment Configuration

- Similarly, since the Automated Resume Screening Tool is a web-based application, environment configuration is not required, which simplifies its use and end-user accessibility.

3. Application Features

3.1 List of Application Features

The Automated Resume Screening Tool will have several key features designed to optimize and streamline the recruitment process for HR departments. Here are some of the key features designed to make the recruitment process more efficient, reduce administrative burden, and improve the quality of hiring decisions:

1. **Automated Skill Extraction:** The tool will automatically identify and extract key skills and qualifications from resumes ensuring that resumes are analyzed thoroughly and accurately.
2. **Customizable Screening Criteria:** Users will be able to set specific criteria based on job requirements, such as certain skills, years of experience, or educational qualifications, to help the system categorize and prioritize candidates effectively.
3. **Resume Ranking and Scoring:** Each resume will be scored and ranked based on how well it matches the job criteria set by the recruiter. This feature helps in quickly identifying the most suitable candidates.
4. **Integration with Existing HR Systems:** The tool will be designed to seamlessly integrate with existing HR management systems to provide a unified experience and reduce the need for multiple platforms.
5. **Dashboard for Recruitment Analytics:** An interactive dashboard will provide HR professionals with insights into the recruitment process, such as the number of resumes processed, breakdown of skills across the candidate pool, and tracking of recruitment stages.
6. **Data Privacy and Security:** Ensuring the confidentiality and integrity of candidate data will be a priority, with features adhering to industry-standard data protection regulations.
7. **Multi-Format Support:** The tool will be capable of parsing resumes from various formats, including PDF, DOCX, and text files, to accommodate different submission types.
8. **Feedback Loop for Continuous Improvement:** The system will include a mechanism for HR users to provide feedback on the tool's recommendations, which will be used to continually refine and improve the machine learning models behind the scenes.
9. **Cloud-Based Accessibility:** Being cloud-based, the tool will allow HR teams to access the system from anywhere, facilitating remote recruitment processes and collaboration among team members.
10. **Automatic Updates and Maintenance:** With cloud deployment, the system will automatically receive updates and maintenance, ensuring that it remains efficient and secure with minimal downtime.

4. Features Instructions

4.1 User Story/Use Case

User stories are listed below, followed by screenshots calling out their involvement.

4.1.1 User Story 1: Resume Upload

- **Description:** As an HR staff member, I want to be able to upload resumes in multiple formats including PDF, DOCX, and TXT through the system's user interface, so that I can efficiently manage and process applications from various sources without having to manually convert them into a single format, ensuring no candidate is overlooked due to technical constraints.

4.1.2 User Story 2: User Account

- **Description:** As an HR staff member, I want to have a user account so that I can maintain my username and password.

4.1.3 User Story 3: Application Login

- **Description:** As an HR staff member, I want to use my account username and password so that I can log in to the system.

4.1.4 User Story 4: Extract skills, educational background, and professional experience from uploaded resumes

- **Description:** As an HR staff member, I want the system to automatically utilize AWS Comprehend to extract skills, educational background, and professional experience from uploaded resumes.

4.1.5 User Story 5: Store extracted resume data

- **Description:** As an HR staff member, I want to store extracted resume data on a local server so that this information can be stored in a structured format enabling quick access and analysis of candidate qualifications.

4.1.6 User Story 6: Upload job description / define job-specific criteria

- **Description:** As an HR staff member, I want to define job-specific criteria, including required skills, years of experience, and educational qualifications so that related data can be stored and queried.

4.1.7 User Story 7: Rank resume based on defined job-specific criteria.

- **Description:** As an HR staff member, I want to rank resumes based on defined job-specific criteria so that top candidates can be identified.

4.1.8 User Story 8: Analytics Dashboard

- **Description:** As an HR staff member, I want a dashboard that displays analytics so that captured data can be analyzed thoroughly.

4.1.9 User Story 9: Resume Screening Process Dashboard

- **Description:** As an HR staff member, I want a dashboard that displays summaries of the resume screening process so that an overview of the overall process, rather than detailed data, is provided.

4.1.10 User Story 10: Categorize resumes into predefined job categories.

- **Description:** As an HR staff member, I want to categorize resumes into predefined job categories based on the extracted skills and experiences using natural language processing so that categorizing resumes can be simplified.

4.1.11 User Story 11: Resume Match Percentage

- **Description:** As an HR staff member, I want to generate a match percentage for each resume so that it is simple to see how closely the resume meets the predefined job-specific criteria.

4.1.12 User Story 12: Match Percentage Override

- **Description:** As an HR staff member, I want to override system generated resume match percentage so that exceptional circumstances (e.g., candidate has skills not previously identified) can be accommodated.

4.1.13 User Story 13: Add Notes/Tags to Resumes

- **Description:** As an HR staff member, I want to add notes or tags to individual resumes so that I can include additional notes (e.g., referred by employee, top candidate...).

4.1.14 User Story 14: Automated Email Communication with Candidate

- **Description:** As an HR staff member, I want to schedule and send automated email communications to candidates so that I can ensure notifications are sent and allow time to concentrate on other efforts (e.g., rejection letter).

4.1.15 User Story 15: High Priority Match Notification

- **Description:** As an HR staff member, I want to receive real-time notifications when a resume matches high-priority job criteria so that application can be processed immediately.

4.2 Detailed Instructions User Story/Use Case Involvement

Step 1:

- (Image 1) Users enter their username, password, and click “Login” in order to access the Automated Resume Screening Tool.

- User Stories: US-2 User Accounts, US-3 Application Login

Step 2:

- (Image 2) Users gain access to the tool's homepage.
- User Stories: N/A

Step 3:

- (Image 3) User clicks the "Notifications" to view latest notifications.
- User Stories: US 15: High Priority Match Notification

Step 4:

- (Image 4) User clicks the "Comparison Tool" to begin comparison of job description with resume.
- User Stories: US 6: Upload job description / define job-specific criteria

Step 5:

- (Image 5) User selects job description and resume to upload from file explorer.
- User Stories: US 6: Upload job description / define job-specific criteria

Step 6:

- (Image 6) User clicks "Compare" to upload documents and start comparison process.
- User Stories: US 4: Extract skills, educational background, and professional experience from uploaded resumes, US 5: Store extracted resume data, US 6: Upload job description / define job-specific criteria

Step 7:

- (Image 7) Preview of uploaded files is provided by the tool allowing its view without having to the files externally.
- User Stories: US 4: Extract skills, educational background, and professional experience from uploaded resumes, US 5: Store extracted resume data, US 6: Upload job description / define job-specific criteria

Step 8:

- (Image 8 and Image 9) User scrolls down to view comparison results, to include match analysis and recommendation. High match percentage would trigger a notification.
- User Stories: US 4: Extract skills, educational background, and professional experience from uploaded resumes, US 5: Store extracted resume data, US 6: Upload job description / define job-specific criteria, US 7: Rank resume based on defined job-

specific criteria, User Story 10: Categorize resumes into predefined job categories, US 11: Resume Match Percentage, US 11: Match Percentage Override.

Step 9:

- (Image 10) User clicks Recruitment Status Board to view overall recruitment status of candidate. Clicking on view resume allows viewing of uploaded resume, while clicking on email candidate allows automated email communication with candidate.
- User Stories: US 14: Automated Email Communication with Candidate, US 13: Add Notes/Tags to Resumes

Step 10:

- (Image 11) Clicking on user account allows the users to update their username and password accordingly.
- User Stories: US 2: User account

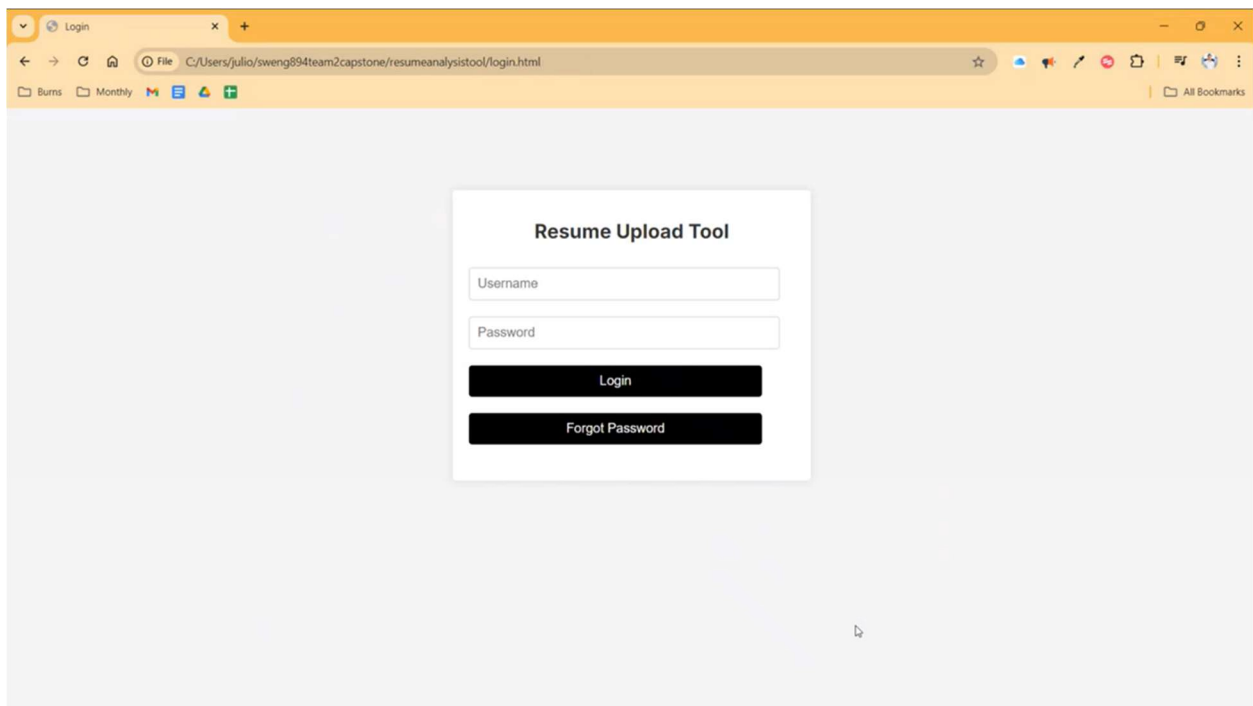


Image 1 – Login Page

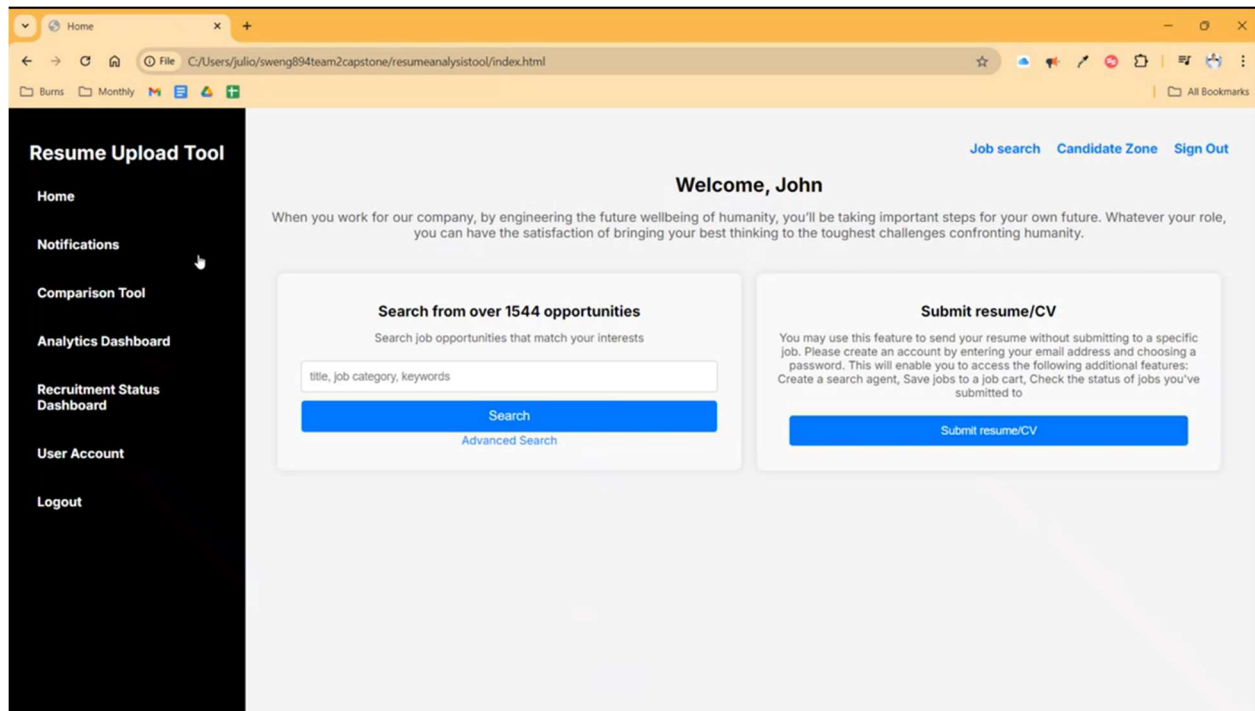


Image 2 – Welcome Page

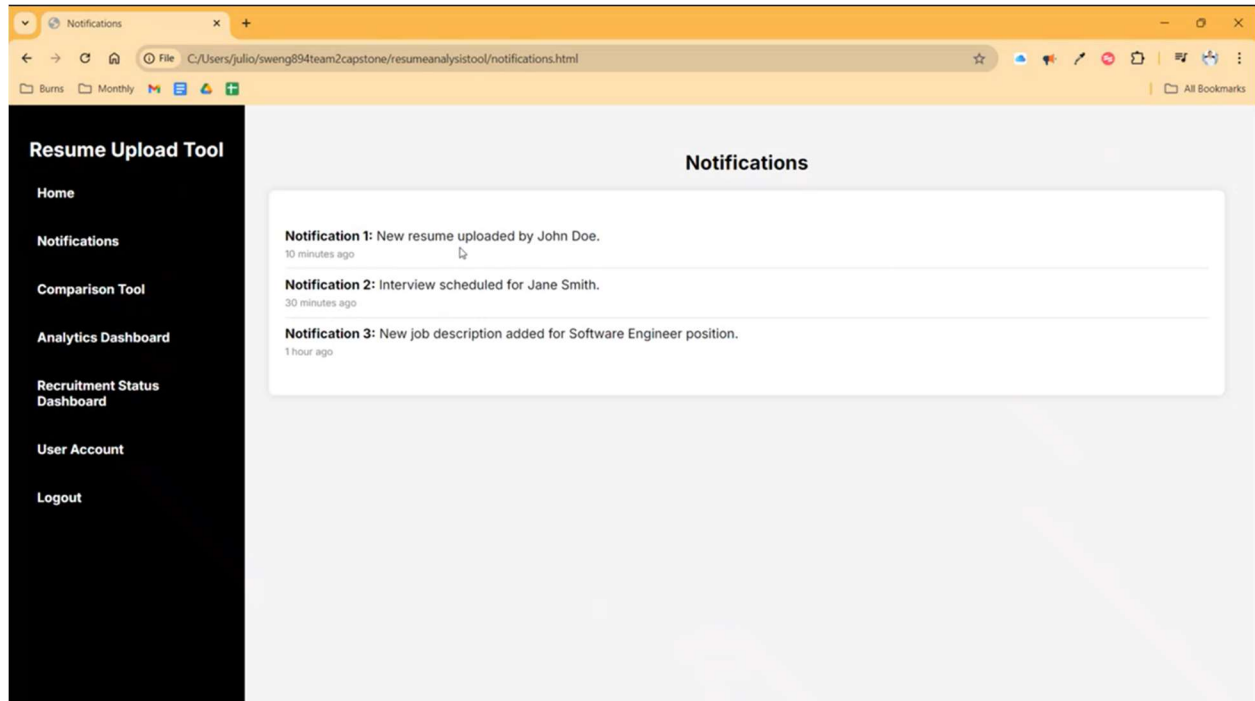


Image 3 – Notifications Page

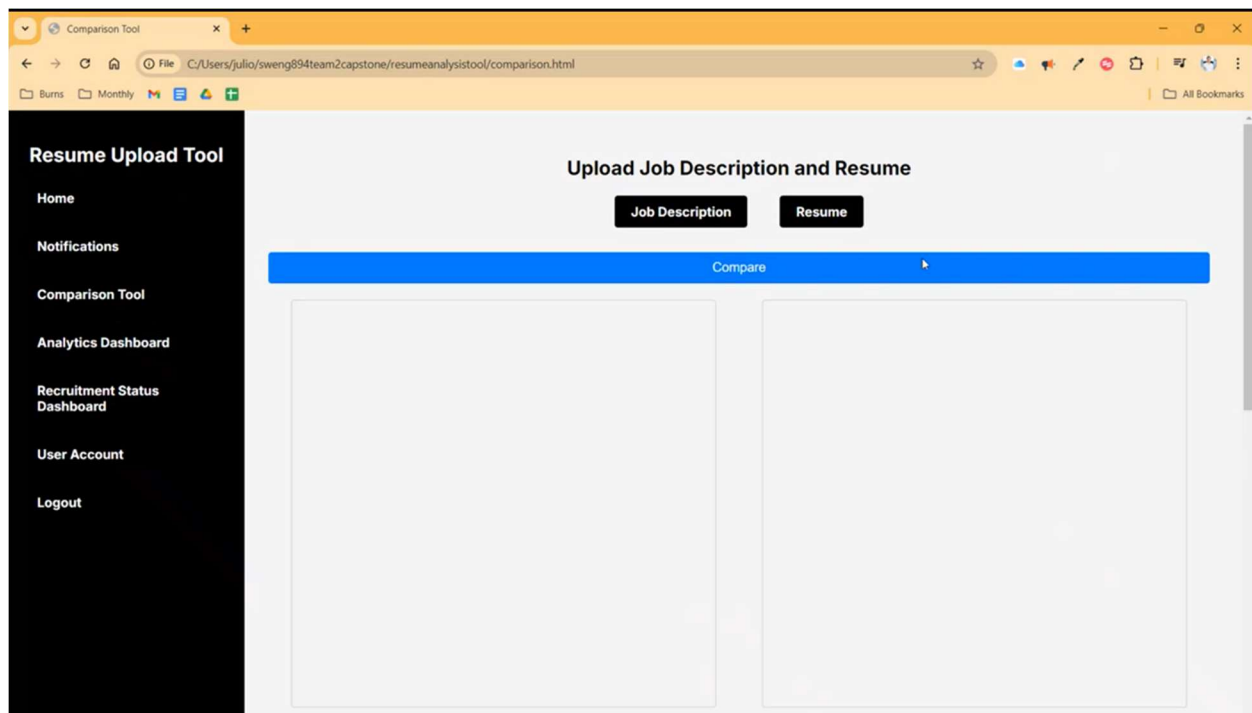


Image 4 – Comparison Tool

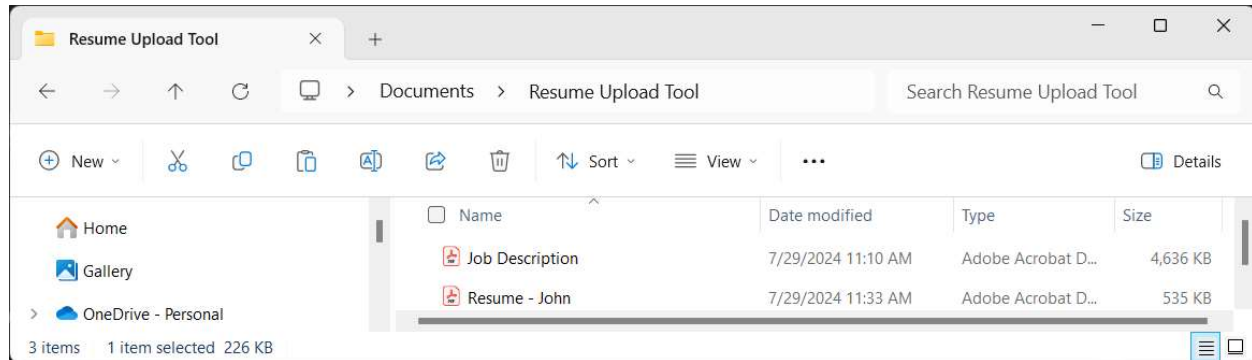


Image 5 – File Selction

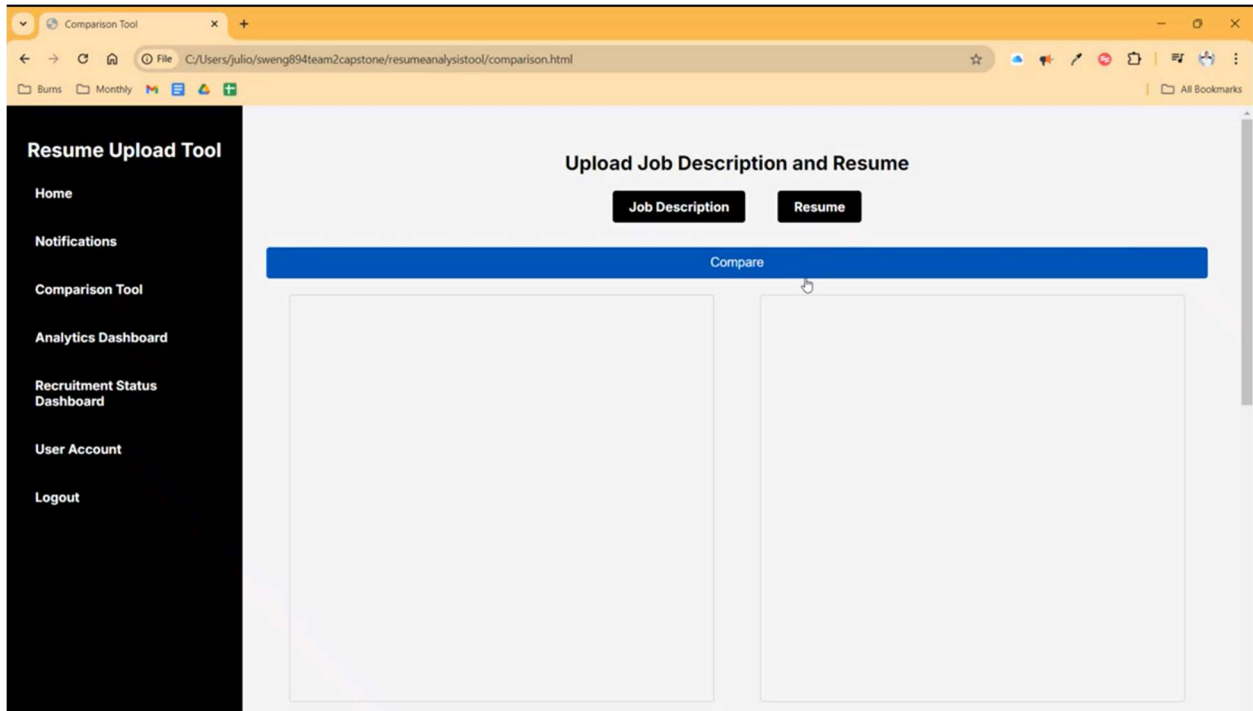


Image 6 – Comparison Tool Ready to Compare

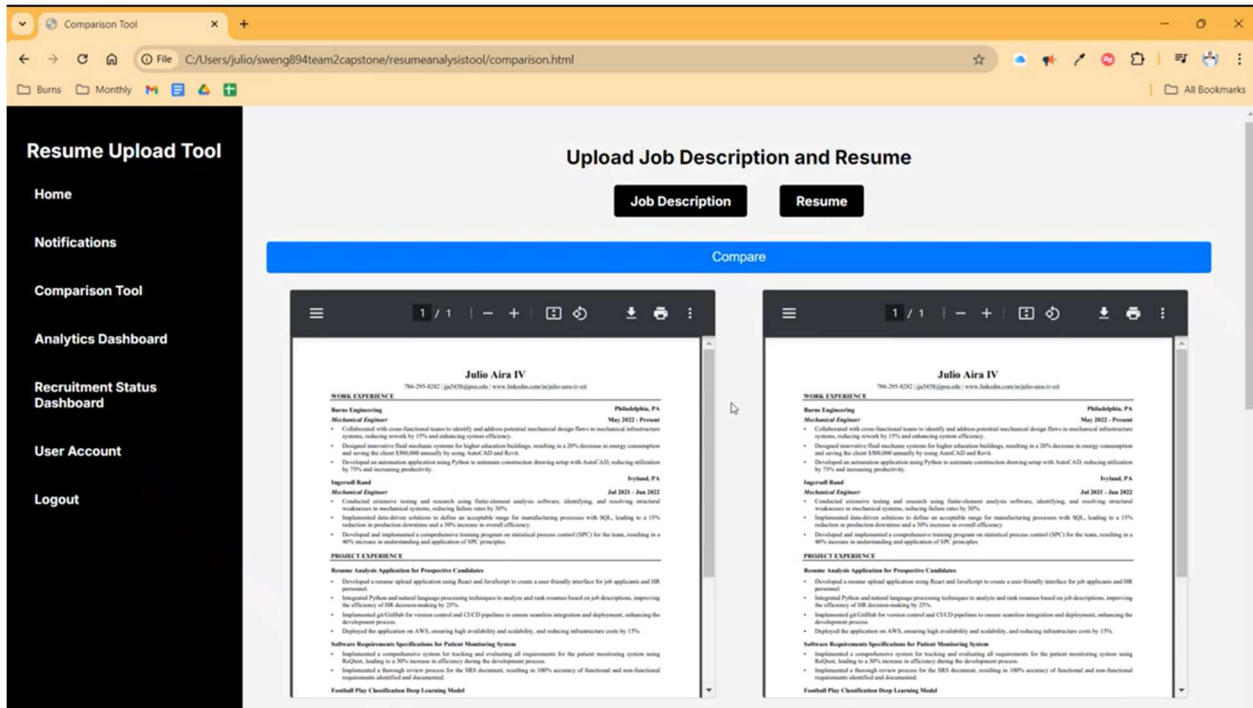


Image 7 – Uploaded Job Description and Resume Documents

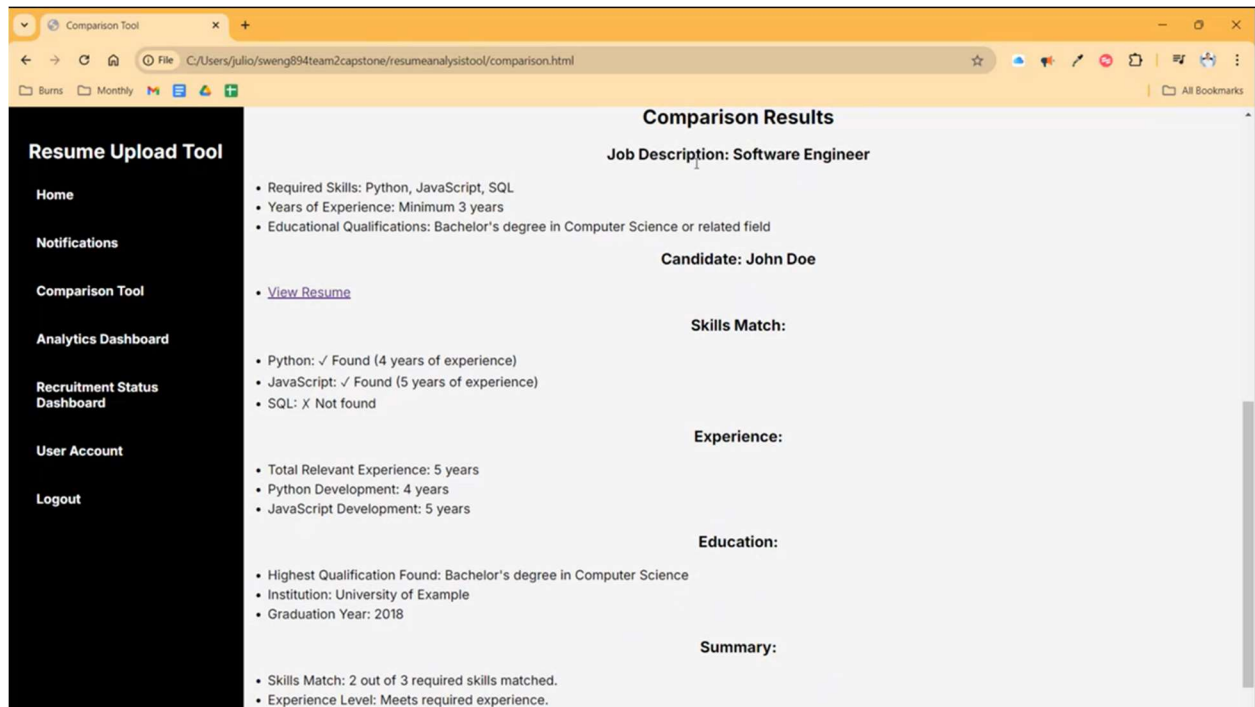


Image 8 – Comparison Results (1 of 2)

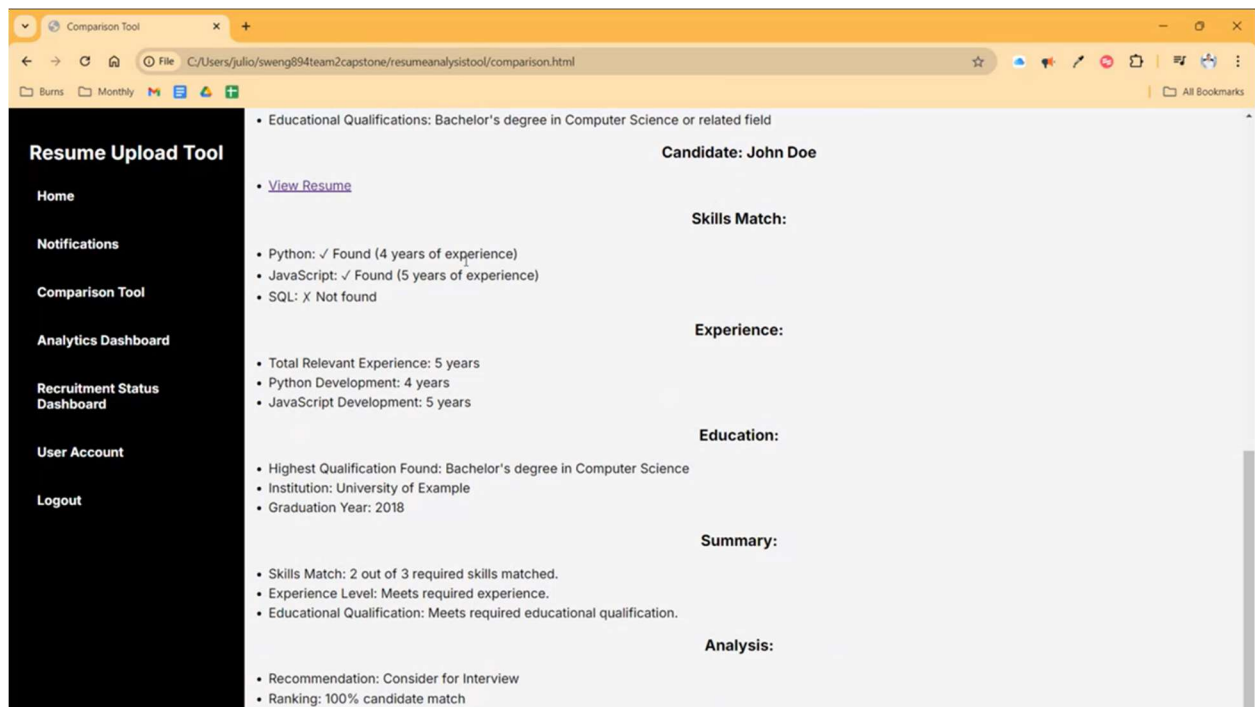


Image 9 – Comparison Results (2 of 2)

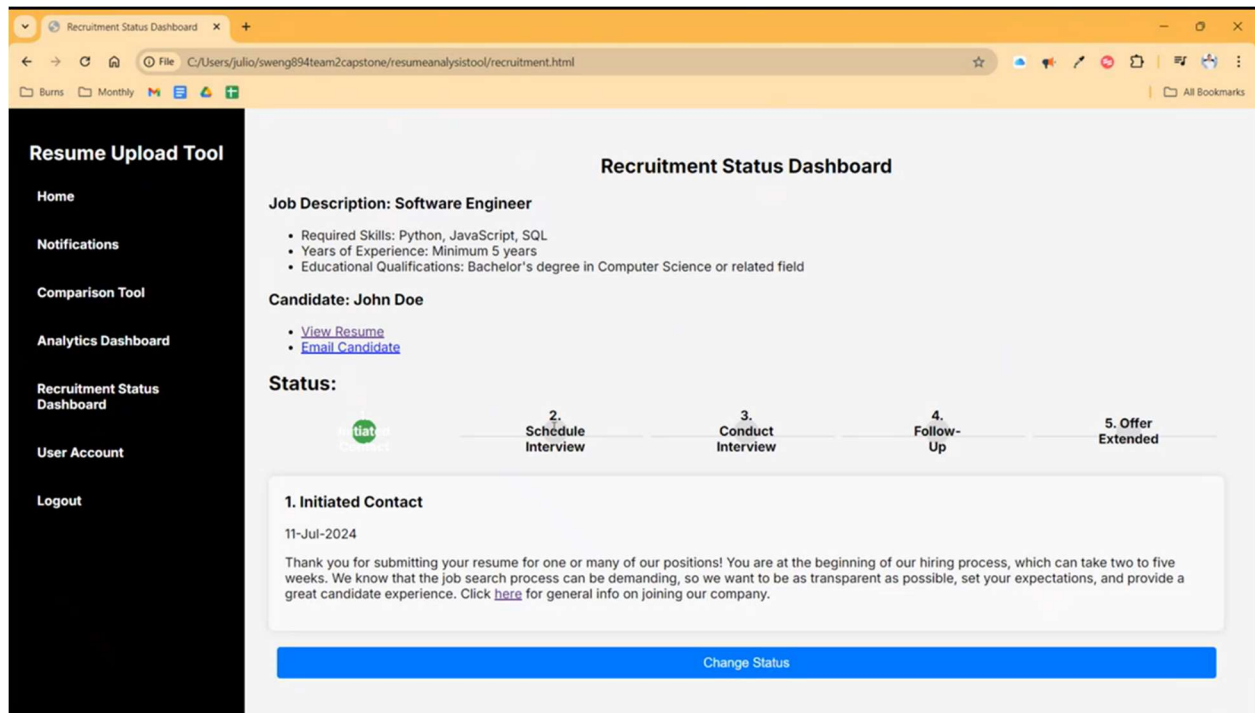


Image 10 – Recruitment Status Board

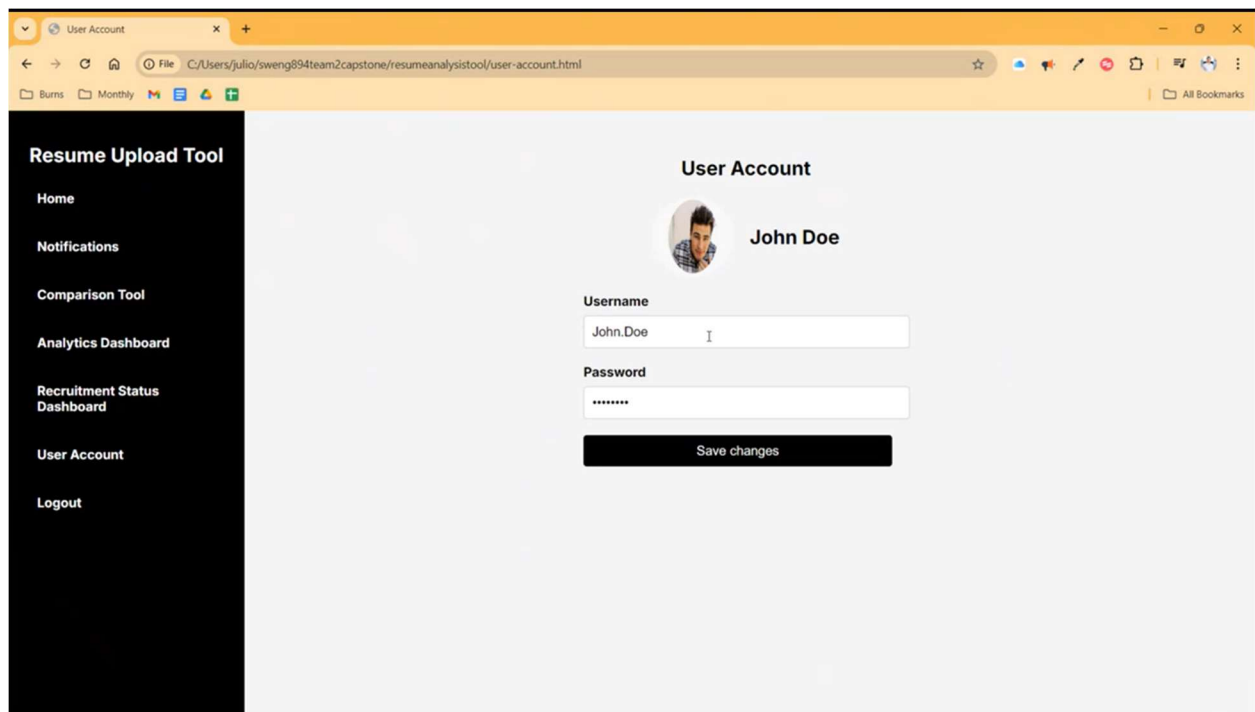


Image 11 – User Account Maintenance