RAG Based Freelancer Assistant
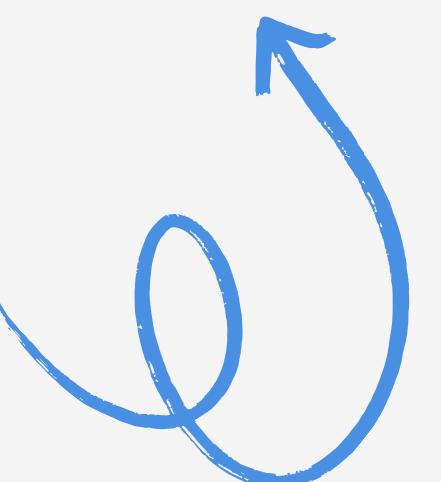
Prepared By:
Youssef Hussieny 222101943
Adham Mohamed 222100195
Samaa Khaled 222100761
Habiba Ahmed 222100471
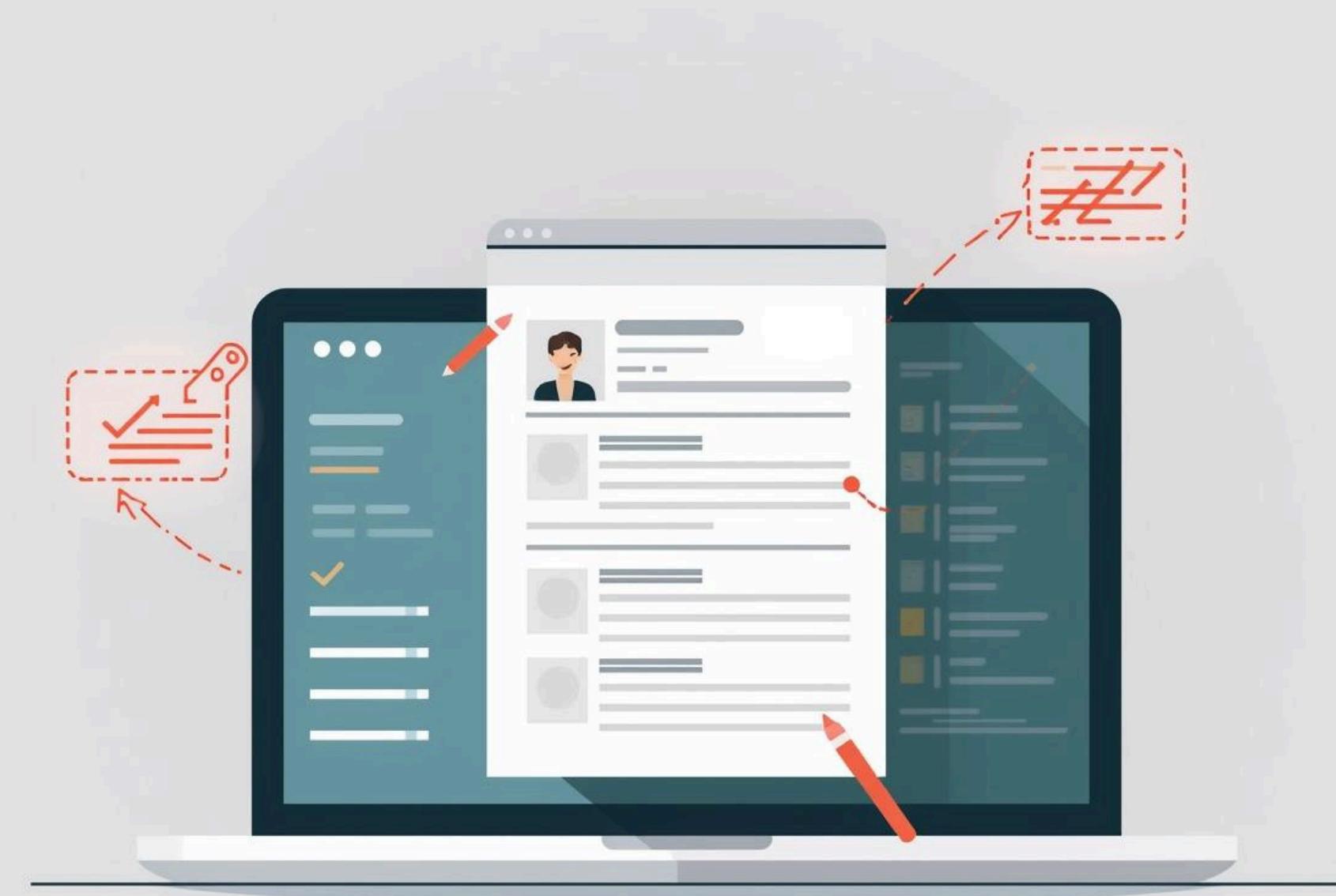
Galala University, Dr. Safa Elaskary

Smart Freelance Platform Overview

The Smart Freelance Platform is an **AI-powered career tool** designed to enhance resume feedback with innovative features, including interactive critiques and automated data conversion, revolutionizing how freelancers approach job applications.

Key Problems in the System
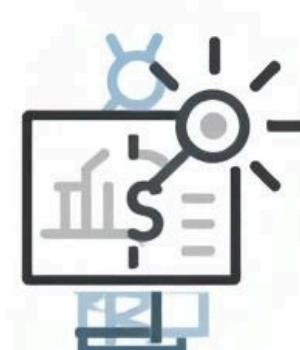
The project faces three critical issues: **Static Layout Feedback** ignores visual elements, **API Stability** is hindered by PDF encoding errors, and **Service Reliability** suffers from vision model rate limits, impacting performance.

Static layout rtcons

API Stability milagy

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Streamlit App Integration Overview

This page illustrates the **Streamlit app's design**, seamlessly integrating vision analysis with text processing, allowing real-time user interaction and feedback on resumes, bridging technology and recruitment expertise effectively.

Challenges in System Development

The project faced **significant challenges** including ensuring valid JSON output, managing safety filters for sensitive content, and handling dependencies like poppler for reliable PDF conversion, all crucial for project stability.

Methodology Timeline

Initial Setup

The project began with setting up the core infrastructure for file ingestion, paving the way for seamless PDF uploads and ensuring user engagement from the start.

Vision Analysis

With the groundwork laid, the team integrated advanced vision analysis tools to identify layout flaws, enhancing the overall user experience and interaction with resumes.

Text Sanitization

Implementing UTF-8 cleaning processes was crucial for ensuring valid text extraction, preventing system crashes, and maintaining data integrity throughout the application.
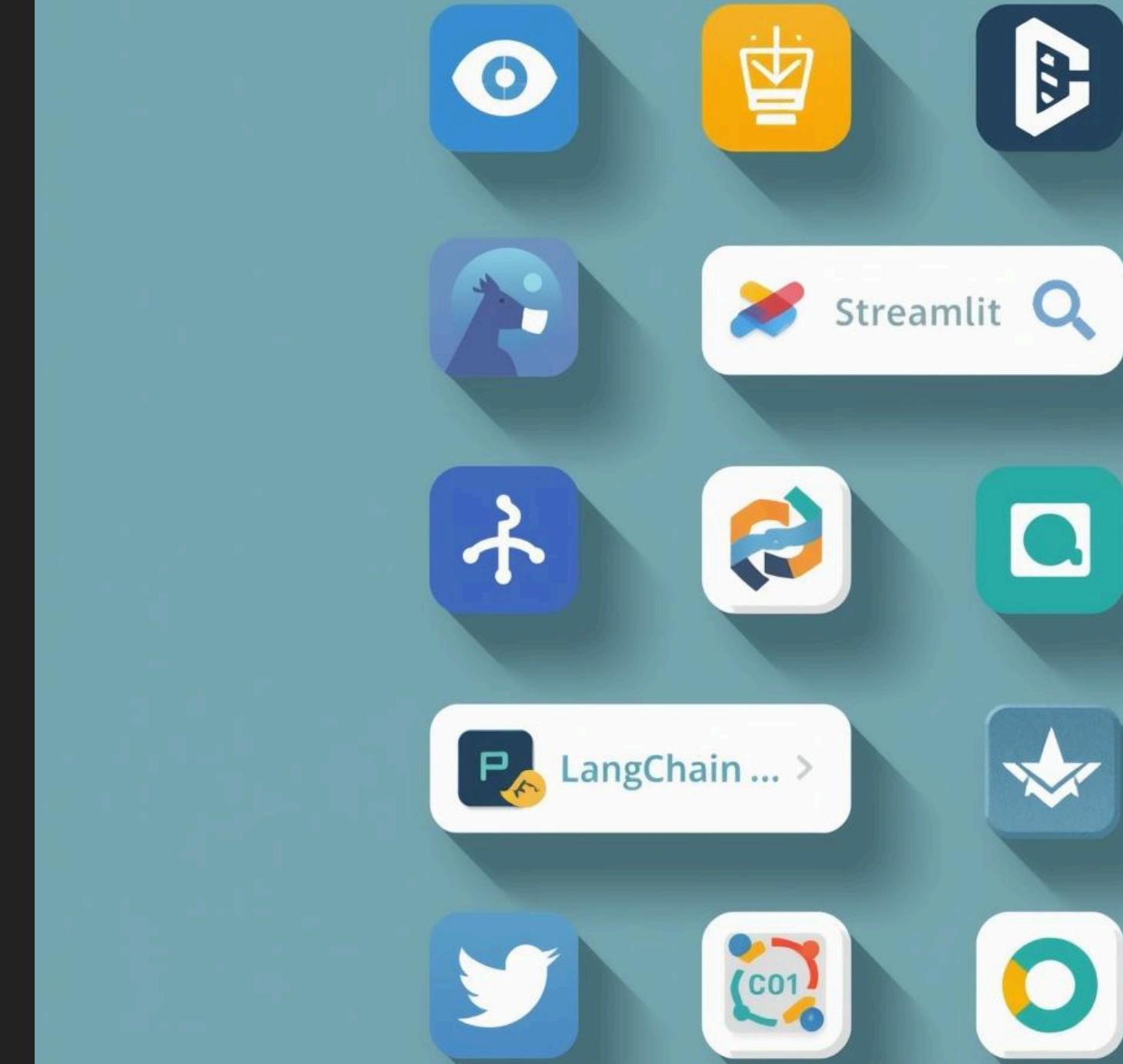
Interactive Chat

The final stage involved developing the interactive chat feature, allowing real-time discussions between users and the AI about resumes, facilitating personalized career guidance effectively.

Tools and Technologies Overview

This project utilizes a robust technology stack, including **Gemini 1.5 Flash** for LLM, **Streamlit** and **LangChain** for frameworks, and essential libraries such as **Pillow** and **DuckDuckGo Search** for enhanced functionality.
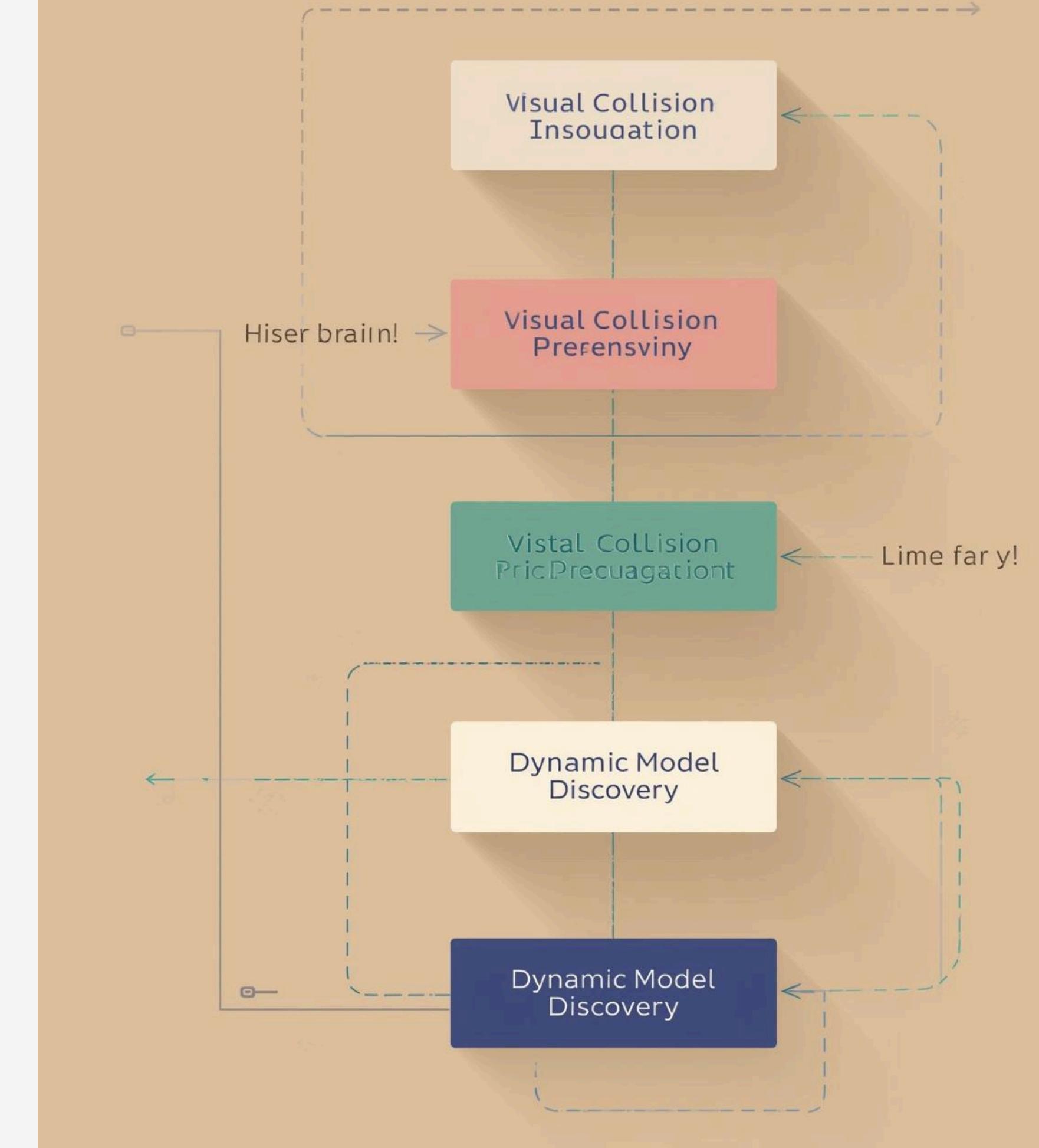
Solutions Implemented for System Improvements

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We introduced **UTF-8 sanitization** for reliable text extraction and implemented **automated retry logic** to effectively handle API rate limits, ensuring improved stability and functionality of the platform.
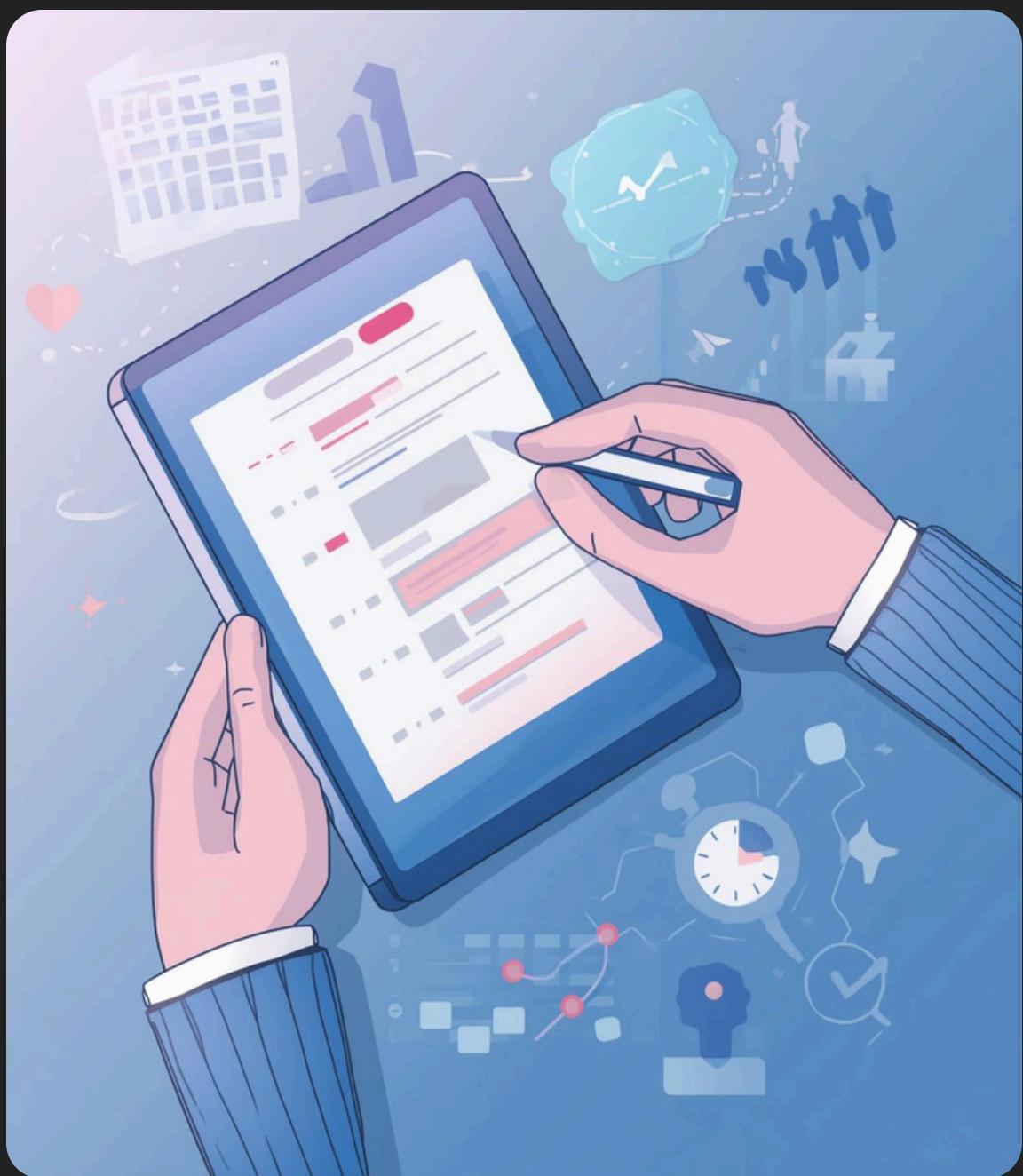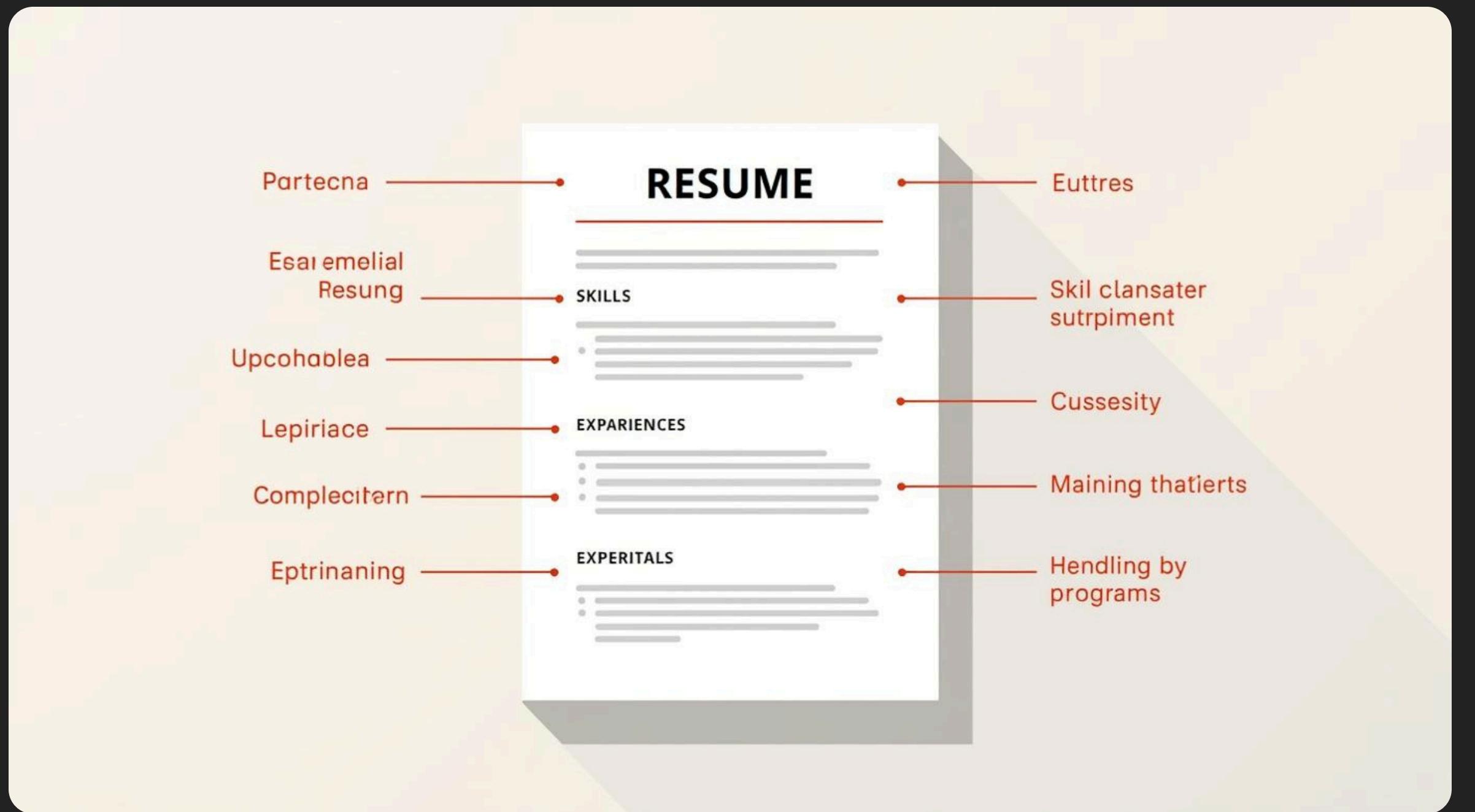
Innovative Solutions for Enhanced Usability
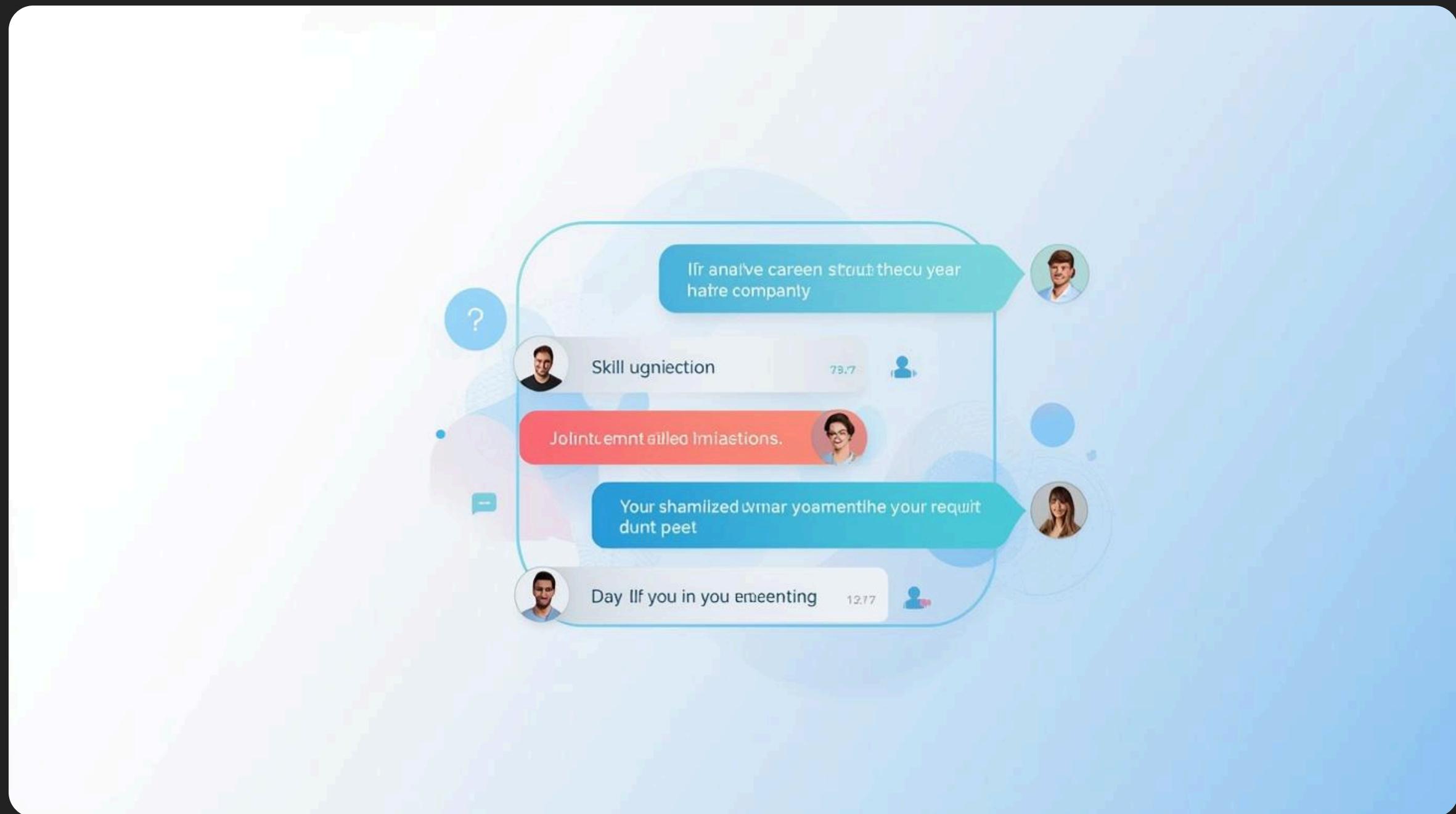
The platform incorporates **visual collision logic** to prevent overlapping feedback annotations, and a **dynamic model discovery** feature to automatically select the most suitable AI model, ensuring efficient and accurate resume critiques.

Visual Critique of Resumes

Career Assistant Chat Interface

Merging AI with Career Coaching

The platform successfully combines **AI vision analysis** and personalized career coaching, providing users with intelligent, actionable feedback on their resumes, thereby enhancing their job-seeking efforts and overall career development.

Key Tools and Technologies

Thank You

Collaborating for a brighter future