


TextEvolve

Digitizing History with AI/OCR

Team Name : Dynamic Dreamers

NMNT ID : NMNTSTD7116020

College Name : Kathir College of Engineering

Theme: Artificial Intelligence

Problem Statement:

How might we develop an AI or OCR solution to digitize and convert handwritten, old registered documents into a readable and accessible format in regional languages, improving public access and readability of historical records? The solution should allow the output to be downloaded in various formats such as PDF and Word, enabling wider distribution and accessibility.

Existing System:

- Existing manual transcription methods are slow, costly, and error-prone.
- Standard OCR models often struggle with accuracy for handwritten text, regional languages, and historical scripts.
- Physical document degradation and limited accessibility are significant challenges.

Proposed System:

- An AI-driven OCR platform specifically designed for handwritten text and regional languages.
- It utilizes a dual OCR approach:A custom Machine Learning (ML) model trained for specific scripts handles initial recognition.
- Google OCR API is integrated for enhanced accuracy and corrections.
- The platform aims to be fast, scalable, and user-friendly, offering real-time results and progress tracking.

- **Frontend:** React Vite & Tailwind CSS for a responsive UI.
- **Backend:** Python Flask for backend services and API integration.
- **Database:** MongoDB for scalable document storage.
- **AI/ML:** TensorFlow, PyTorch, Keras for the custom model; Google OCR API.
- **Programming Languages:** Python, JavaScript.

Custom ML Model:

- Designed specifically for handwritten and regional scripts.
- Improves recognition accuracy over time with continuous training.

Dual OCR Integration:

- Custom model for initial recognition.
- Google OCR API for enhanced accuracy and corrections.

Language Versatility:

- Language Versatility

Robust Data Handling:

- Python Flask backend paired with MongoDB ensures scalable and secure storage.

User-Friendly Platform:

- Modern UI for easy upload and retrieval.
- Real-time results and progress tracking.

Technology Stack

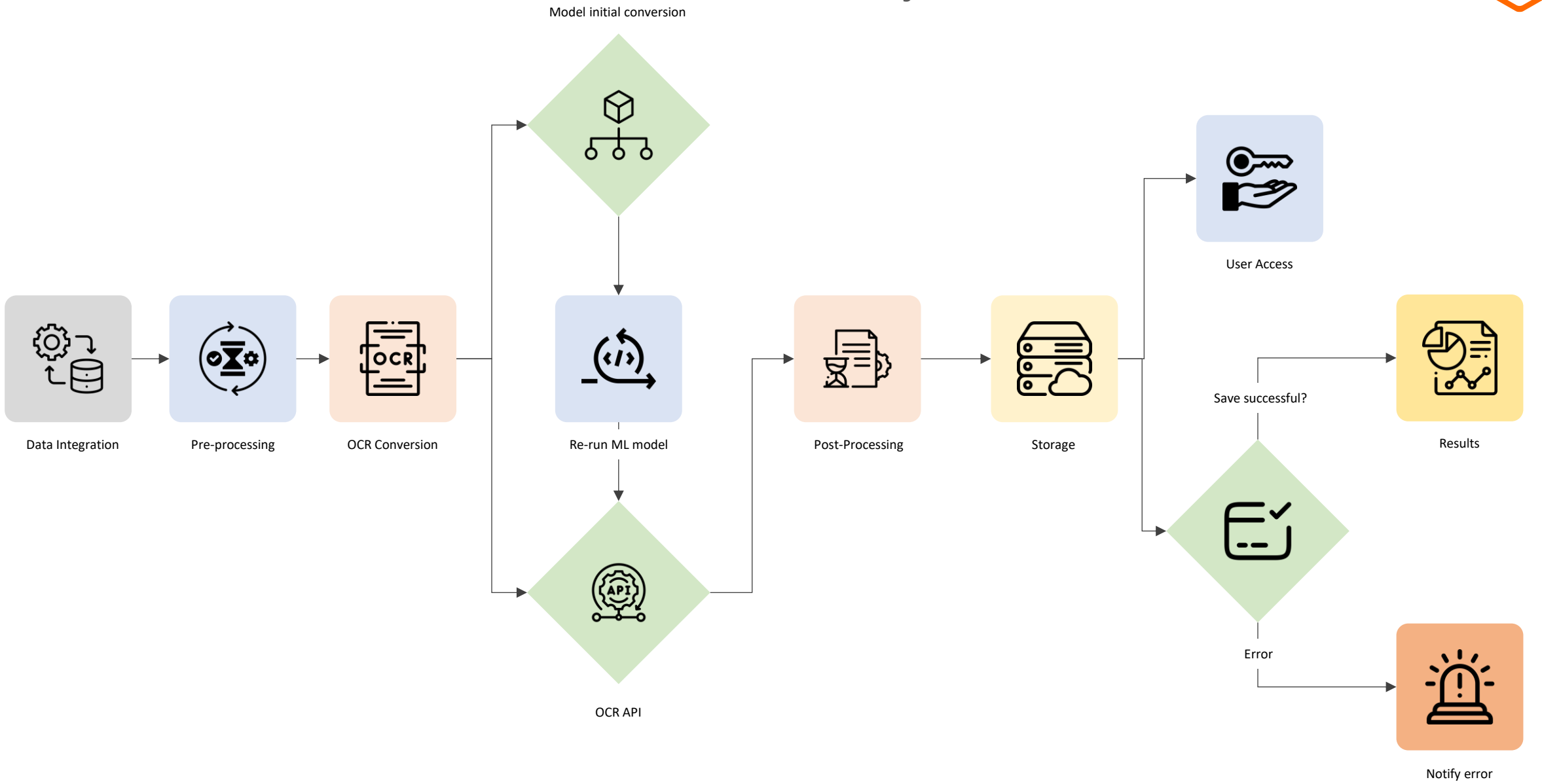
Programming Languages

Database & Deployment

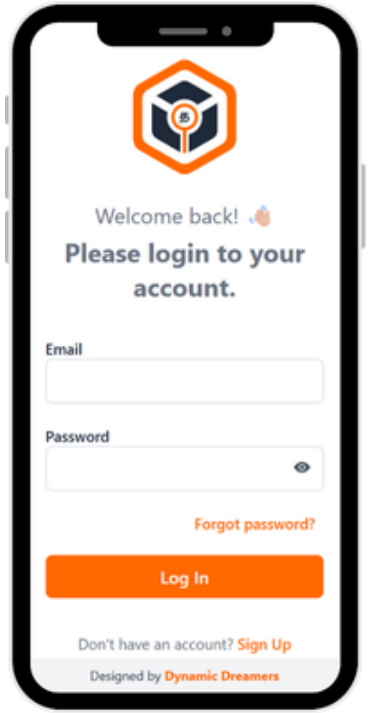
Frameworks & Libraries

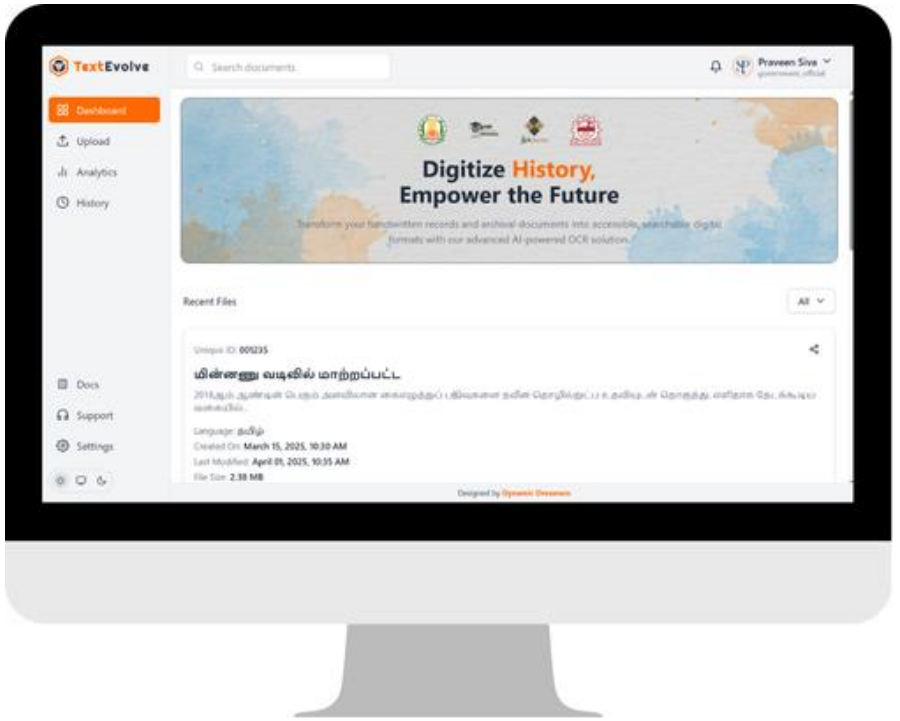
Development Tools

System Architecture & Workflow



Demo / Sample Results





https://squadofcreators.github.io/TextEvolve

Degradation:

Physical documents deteriorate over time.

Inaccessibility:

Limited access to rare or regional texts.

Handwriting Variability:

Handwritten texts present difficulties in standard OCR processing.

Language Barriers:

Many OCR solutions are not optimized for regional languages.

Cultural Preservation: Safeguard historical documents for future generations.

Enhanced Accessibility: Allow researchers, educators, and the public to easily access digitized content.

Improved Research: Facilitate the study of regional languages and historical texts.

Scalability: A robust system that can grow to handle vast archives.

TextEVolve is an AI-driven solution that digitizes handwritten historical documents with high accuracy using a **custom ML model** and **Google OCR API**.

By combining innovation with technology, it preserves cultural heritage, enhances accessibility, and supports research — ensuring valuable historical knowledge is safeguarded for future generations.

Ask Questions

Our Team

Mrs. Kavitha M

Faculty Guide

Yuva Nandhini M

AI/ML Developer

Praveenkumar S

AI/MERN Developer

Sibi Siddharth S

AI/MERN Developer

Uma Maheswari P

AI/ML Developer

Preserving the Past,
Empowering the Future