RSET
RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Synapse : Where AI Meets Education

Problem Definition

The traditional process of converting physical text into digital, editable, and searchable formats is often time-consuming and inefficient, particularly for students and educators working with handwritten notes or multilingual content.

Goals & Benefits

Meet the growing demand for digitized, interactive educational content by leveraging AI-powered tools. This enhances accessibility, streamlines learning and note-taking and promotes inclusive and interactive education.

Features

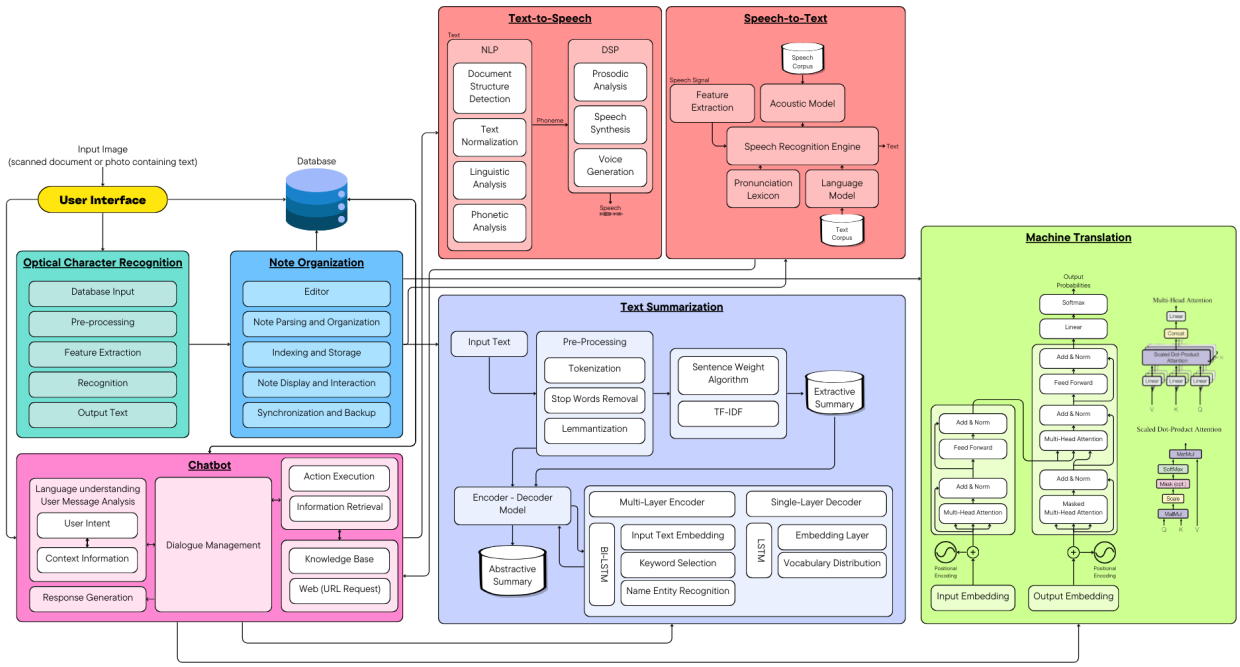
1. Convert text images into editable and searchable digital content using advanced OCR technology
2. An AI chatbot for answering questions, generating summaries, and assist with note organization
3. Speech-to-Text and Text-to-Speech, ensuring the platform is adaptable to users from diverse linguistic backgrounds

Technology

1. Frontend: React + Vite
2. Backend: FastAPI + Tesseract OCR + NLP + Google Gemini API

Future Scope

Expanding OCR support for more languages and improving handwriting recognition using deep learning models. Developing an adaptive learning assistant that personalizes study materials based on user interactions



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