Problem Statement:

Automated Essay Scoring and Feedback

Creating an AI tool that provides instant grading and constructive feedback on students' essays, freeing up teachers' time for more personalized teaching and reducing subjective bias in scoring.

Abstract

The traditional manual evaluation system in education is facing challenges due to increasing student-to-teacher ratios, leading to time-consuming and unreliable assessments. As a solution, online examination systems have emerged, primarily catering to multiple-choice questions.

However, grading essays and short answers remains a significant hurdle. Despite decades of research, automated essay grading struggles to consider essential parameters such as content relevance, idea development, cohesion, and coherence. Current approaches like pattern matching and language processing are insufficient for comprehensive essay evaluation.

Four main parts

INITIAL INPUT

We can take input as audio, pdf file or textbox and convert it into text

Scoring and Feedback

We evaluated score using AI and NLTK and give feedback.

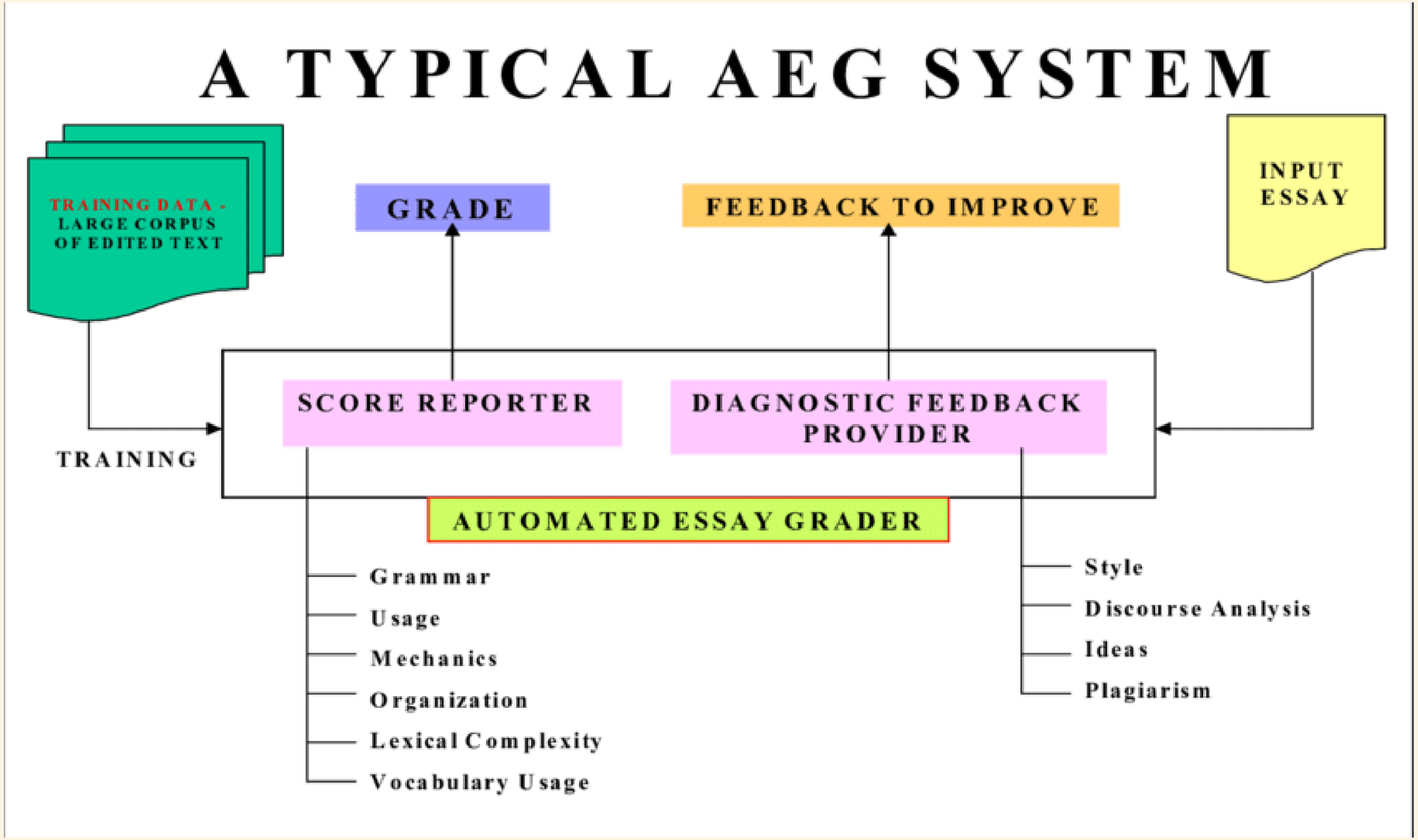
Plagiarism

We are comparing the current student essay with others to ensure there is no plagiarism.

Translator

The given language is getting converted to English using Translator API.

Flowchart


A TYPICAL AEG SYSTEM
TRAINING DATA - LARGE CORPUS OF EDITED TEXT
GRADE
FEEDBACK TO IMPROVE
INPUT ESSAY
SCORE REPORTER
DIAGNOSTIC FEEDBACK PROVIDER
TRAINING
AUTOMATED ESSAY GRADER
Grammar
Usage
Mechanics
Organization
Lexical Complexity
Vocabulary Usage
Style
Discourse Analysis
Ideas
Plagiarism

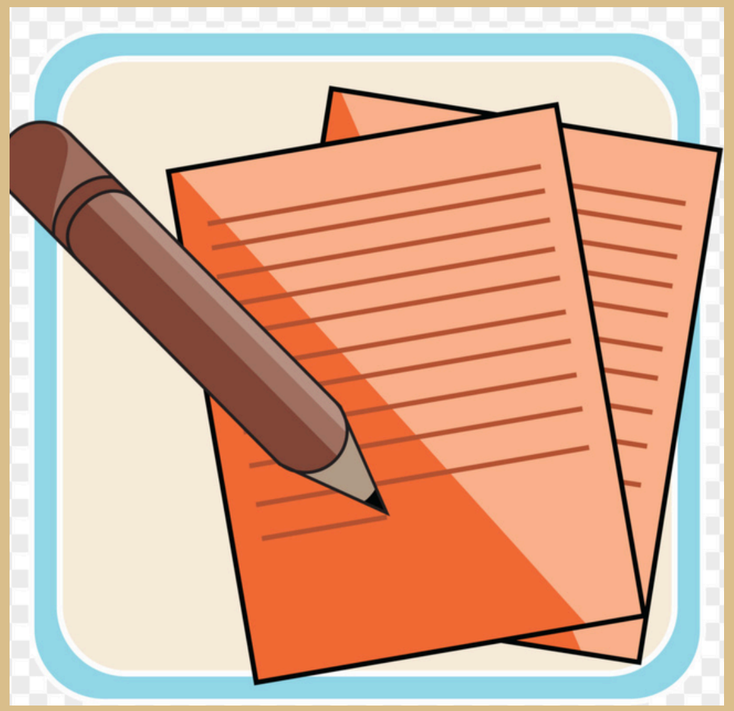
Technology Used:

Flask microframework for the web application.

NLTK ,Tesseract (OCR), LLMs

Language-Tool-Python, Gensim

Python, Java ,HTML & CSS



Conclusion

We have proposed an approach based on recurrent neural networks to tackle the task of automated essay scoring. Our method relies on feature engineering and automatically learns the representations required for the task. We have explored a variety of neural network model architectures for automated essay scoring and have achieved significant improvements over a strong open-source baseline. Furthermore, an analysis of the network has been performed to get an insight of the recurrent neural network model and we show that the method effectively utilizes essay content to extract the required information for scoring essays.