

Product Backlog

Team 10: Essay Grading System

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1. Problem Statement

The growing need for automated scoring of essays in educational settings is majorly due to the time constraints of manual grading, especially as teacher-student ratios get worse. Furthermore, enabling software to grade essays would also eradicate inconsistency and make essay grading more uniform.

2. Background Information

Manually grading essays is a time consuming and tedious process. It is also hard to ensure an equally detailed and uniform level of grading in large classes. An automated grading software for essays not only helps save a lot of time but ensures consistent grading standards and eradicates multiple areas of potential human error. Furthermore, as students, we are also often unsure of the quality of our assignments before submission. An automated essay grader provides a basis for comparison and standardized grading which is useful for all students and teachers. By making a web application we can provide anyone anywhere with internet access, to an automated essay grading system.

EdX, an online education platform is the closest existing solution. EdX has a system that asks a human grader to evaluate 100 essays, after which it trains itself to grade the same. So the currently available solutions can reduce the long run time constraints, but still require manual grading by each new user to teach the software. Furthermore, existing solutions do not verify the actual data quoted in the essays and seem more one dimensional for grammar and language rather than a complete grader. Existing solutions also use machine learning with human hand labeled features, our solution will use deep learning to find features it deems best. Our solution is to predefine the essay standards and remove individual data entry by users, as well as implement an integrated data verification system. The final product should provide a grade, alongside sufficient reasoning for that grade.

3. Requirements

Backlog ID	Functional Requirements	Hours	Status
1	As a user, I can sign up for the web application	10	
2	As a user, I can log into my profile once signed up	10	
3	As a user, I can upload an essay question and answer in the form of a text file	5	
4	As a user, I can receive a letter grade for my essay	50	
5	As a user, I can receive a breakdown with points of how this grade was derived	10	
6	As a user, I can receive adequate feedback on the quality of language in my essay	30	
7	As a user, I can receive adequate feedback on the theme and relevance of my essay	30	
8	As a user, I can receive adequate feedback on the validity of the data in my essay	100	
9	As a user, I can save my grades and feedback to be viewed later	5	
10	As a user, I can upload a folder of files at once for batch grading (if time permits)		
11	As a user, I can get confidence scores of how certain the algorithm is of the grade it has given to my essay(s) (if time permits)		

Backlog ID	Non- Functional Requirements	Hours	Status
11	As a user, I expect my essays and grades to be secure from other users		
12	As a developer, I expect the grading component to be reusable and extendable		
13	As a developer, I expect the front end to be responsive and compatible with ease on desktops and mobile devices		

14	As a user, I expect to get the grades for my essay within a minute after submission		
15	As a developer, I expect the grading system to have an accuracy of greater than 80% on unseen data (essays)		