

PROJECT REPORT OF INDUSTRY ORIENTED HANDS-ON EXPERIENCE (IOHE)

ON

Automated Grading System

submitted in partial fulfilment of the requirements for the award of degree of

BACHELOR OF ENGINEERING

In

COMPUTER SCIENCE AND ENGINEERING

Submitted by:

Ishita Jindal

2110993799

Supervised By:

Dr. Harshvardhan

Assistant Professor

Chitkara University



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CHITKARA UNIVERSITY

CHANDIGARH-PATIALA NATIONAL HIGHWAY, RAJPURA, PUNJAB, INDIA

CONTENTS

| S.No. | Title | Page No. |
|-------|-----------------|----------|
| | Declaration | 3 |
| | Acknowledgement | 4 |
| | Introduction | 5-8 |
| | Conclusion | 8 |

DECLARATION

I hereby declare that the project work titled, “Automated Grading System” submitted as part of Bachelor’s degree in CSE, at Chitkara University, Punjab, is an authentic record of my own work carried out under the supervision of Dr. Harshvardhan.

Signature(s):

ACKNOWLEDGEMENT

With immense pleasure, Ishita Jindal presenting the “Automated Grading System” project report as part of the curriculum of 'BE-CSE (AI)'.

We would like to express our sincere thanks to Dr. Vandana Sood, Dr. Kamal Deep Garg, and Dr. Harshvardhan for their valuable guidance and support in completing our project.

We would also like to express our gratitude to our dean, Dr. Sushil Narang, for giving us this great opportunity to do a project. Without their support and suggestions, this project would not have been completed.

Ishita Jindal

(2110993799)

Social Impact of the Automatic Essay Grader Project

1. Introduction

The "Automatic Essay Grader" project is a technological innovation with significant societal implications, particularly in the field of education. By automating the time-intensive process of essay grading, this project enhances efficiency, promotes fairness, and provides students with actionable feedback for continuous improvement. Its societal impact extends beyond classrooms, influencing educational equity, professional development, and accessibility to learning resources. The following sections explore the detailed societal impact of this project, with a focus on how it addresses current challenges, fosters inclusion, and envisions a future of equitable education.

1.1 Reducing Educational Inequities and Democratizing Learning Opportunities

Education is a fundamental right, yet disparities in resources, infrastructure, and teacher availability often hinder its accessibility. The Automatic Essay Grader offers a scalable solution that reduces the gap between resource-rich and resource-limited educational settings.

- **Access in Underprivileged Areas:** In remote or underserved regions, where qualified teachers may be scarce, this tool can serve as a surrogate evaluator, providing students with timely and fair assessments of their work. By automating the grading process, institutions in these areas can ensure that every student receives constructive feedback, regardless of geographic or financial barriers.
- **Language Support for Non-Native Speakers:** Language barriers often prevent non-native English speakers from excelling in writing-intensive curricula. The integrated grammar-checking and readability tools help these learners identify and correct linguistic errors, empowering them to improve their proficiency and communicate effectively in a globalized world.
- **Inclusivity for Special Needs Learners:** For students with physical or cognitive disabilities, traditional essay evaluation methods may not fully accommodate their unique needs. The grader can integrate accessibility features, such as voice-to-text input or simplified feedback, ensuring that all students have equal opportunities to succeed.

1.2. Enhancing Efficiency and Productivity in Education Systems

Educational institutions and teachers worldwide face mounting pressure to balance growing class sizes, administrative responsibilities, and personalized student engagement. The Automatic Essay Grader addresses these challenges by introducing unparalleled efficiency to the essay evaluation process.

- **Time Savings for Educators:** Teachers often spend hours grading essays, which limits the time they can dedicate to individualized instruction and innovative lesson planning. By automating this task, educators can redirect their focus to fostering creativity, critical thinking, and active learning in the classroom.
 - **Streamlining Administrative Tasks:** In large-scale assessments, such as national or statewide examinations, the grader can process thousands of essays in a fraction of the time required by human evaluators. This not only speeds up the evaluation process but also ensures uniform grading standards across all participants.
 - **Support for Lifelong Learning:** Beyond formal education, the platform can be adopted by online learning platforms and corporate training programs to assess written assignments and reports, promoting lifelong learning and professional development.
-

1.3. Promoting Fairness, Transparency, and Trust in Evaluation

Subjective biases and inconsistencies in human grading have long been a source of dissatisfaction among students and educators alike. The Automatic Essay Grader introduces objectivity and transparency, ensuring a fairer evaluation process.

- **Bias-Free Grading:** Unlike human evaluators, who may be influenced by factors such as handwriting, student reputation, or fatigue, the grader evaluates essays based purely on their content and linguistic quality. This ensures that all students are assessed on an equal footing.
 - **Consistency Across Assessments:** The use of standardized algorithms ensures uniformity in grading, eliminating discrepancies that often arise in manual evaluations. Students from different schools, regions, or socioeconomic backgrounds receive feedback based on the same criteria, fostering trust in the system.
 - **Detailed and Transparent Feedback:** The platform's feedback system explains the reasoning behind the scores, highlighting areas for improvement in grammar, coherence, and structure. This transparency builds confidence among students, educators, and parents, reinforcing the legitimacy of automated evaluation.
-

1.4. Encouraging Student Growth and Empowerment

The platform is not merely a grading tool; it is a powerful learning aid that fosters student growth by offering real-time, actionable feedback.

- **Facilitating Self-Improvement:** By identifying specific areas of weakness, such as sentence structure or vocabulary usage, the system enables students to target their efforts and improve progressively.
- **Promoting Critical Thinking:** The platform's analysis features, such as readability scores and text summarization, encourage students to critically evaluate their own work. This

iterative process of self-assessment and refinement nurtures independent thinking and problem-solving skills.

- **Instant Feedback for Faster Learning Cycles:** Unlike traditional grading methods, which may take days or weeks, the system provides immediate feedback. This immediacy helps students correct errors and refine their skills before they become ingrained.
-

1.5. Empowering Educational Institutions with Data Insights

The data generated by the Automatic Essay Grader can serve as a valuable resource for educational research and institutional planning.

- **Identifying Trends in Student Performance:** Aggregated data from the platform can reveal common strengths and weaknesses among students, guiding curriculum design and teacher training programs. For instance, if a majority of students struggle with thesis statement clarity, educators can focus on teaching this specific skill.
 - **Enabling Data-Driven Policy Decisions:** At the administrative level, the grader's analytics can inform policy decisions, such as resource allocation, professional development priorities, and interventions for at-risk students.
 - **Enhancing Teacher Feedback:** Teachers can use the system's insights to complement their own observations, providing more nuanced and tailored support to individual learners.
-

1.6. Fostering Research and Innovation in Educational Technology

The Automatic Essay Grader is a stepping stone for further advancements in educational technology, pushing the boundaries of what AI can achieve in learning environments.

- **Research on AI in Education:** The platform creates opportunities for researchers to explore advanced natural language processing techniques, such as understanding context, sentiment, and creative expression. These studies could lead to breakthroughs in evaluating subjective or creative assignments.
 - **Customizable Learning Platforms:** By integrating AI with other educational tools, such as adaptive learning systems or gamification platforms, the grader can create personalized, engaging, and effective learning experiences for students.
 - **Scalable Models for Global Impact:** With further development, the platform could be adapted to support multiple languages and cultural contexts, making it a global solution for automated assessment.
-

1.7. Ethical and Societal Considerations

While the Automatic Essay Grader offers numerous benefits, it also raises important ethical questions that must be addressed to ensure responsible deployment.

- **Balancing Automation and Human Judgment:** While the platform excels in evaluating technical aspects of writing, it may fall short in assessing creativity, emotional depth, or cultural nuances. Human oversight remains essential to maintain the richness and diversity of education.
 - **Ensuring Accessibility and Equity:** To maximize its societal impact, the system must be accessible to all students, including those in low-income regions or with limited digital literacy. Partnerships with governments and NGOs can help bridge this gap.
 - **Protecting Privacy:** As the platform processes sensitive student data, robust measures must be implemented to safeguard privacy and comply with legal frameworks like GDPR or FERPA.
-

2. Conclusion

The societal impact of the Automatic Essay Grader extends far beyond its technical capabilities. By addressing long-standing challenges in education, promoting equity, and empowering learners, it paves the way for a more inclusive and efficient education system. With thoughtful implementation and continuous innovation, this project has the potential to transform not only how essays are graded but also how education is delivered and experienced globally.