

EVALUATION OF THE USE OF CHATGPT AS A TOOL OF ACADEMIC RESEARCH AMONG UNDERGRADUATE STUDENTS OF AMBROSE ALLI UNIVERSITY, EKPOMA, EDO STATE

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ABSTRACT

This study evaluated the use of ChatGPT as a tool for academic research among undergraduate students at Ambrose Alli University, Ekpoma, Edo State. The study used a descriptive survey design, targeting 300 and 400-level students across three departments within the Faculty of Management Sciences. A multistage sampling technique was employed to select 380 respondents, and a structured online questionnaire titled "Evaluation of the Use of ChatGPT as a Tool of Academic Research among Undergraduate Students" The instrument had a reliability coefficient of 0.85. The questionnaire was shared with students through Google Forms, with a return rate of 350 (92%). Data were analysed using descriptive statistics (mean and standard deviation) and Pearson's Product-Moment Correlation to test hypothesis 1 and One-Sample T-Test for hypotheses 2 and 3. Findings showed that students commonly used ChatGPT to find research topics, understand difficult ideas, summarises content, and complete assignments (grand mean = 3.11). However, they reported challenges such as difficulty in referencing, outdated information, and ethical concerns like over-dependence and plagiarism (grand mean = 3.26). Students found ChatGPT effective and time-saving but remained cautious about its reliability (grand mean = 3.09). The hypotheses test revealed a significant positive relationship between ChatGPT use and academic task completion ($r = 0.684, p = 0.001$). The study concluded that while ChatGPT enhances academic engagement, proper training and ethical use are essential. It was recommended among others that students should be guided to always verify ChatGPT's responses with other credible sources and develop their ideas rather than copy AI-generated texts.

Keywords: Evaluation, Use of ChatGPT, Academic Research, Undergraduate Students, Ambrose Alli University

Introduction

Artificial Intelligence (AI) is rapidly changing how people learn and work. Various generative AI tools are available, encompassing support for crafting human-like language, generating images or art, and even producing code (Westfall, 2023). AI is defined by Kaplan and Haenlein (2019) as the capacity of a system to precisely decipher external input, acquire knowledge from that data, and employ the insights gained to accomplish objectives via adaptable modification. Therefore, in an era where AI is poised to play a pivotal role, ensuring proper education for

humans becomes paramount, especially for educators who must recognise their collaborative role with machines (Ibrahim & Adeola, 2023).

In today's rapidly evolving educational setting, the integration of cutting-edge technologies is transforming the way we teach and learn (Oladokun *et al.*, 2023). One such transformative technology is ChatGPT (Generative Pre-trained Transformer), an Artificial Intelligence (AI)-powered language model developed by OpenAI. It has garnered significant attention for its ability to generate human-like text, answer questions, and assist in various language-related tasks. "Artificial Intelligence (AI) has become increasingly important, influencing many aspects of our lives", and "large language models (like ChatGPT) have brought AI into the spotlight (Kandlhofer *et al.*, 2023). As educational institutions seek innovative ways to enhance teaching and learning experiences, it becomes crucial to find out the extent to which such advanced AI tools are being adopted and integrated into the academic realm.

ChatGPT helps users in answering questions, generating ideas and assisting with some writing tasks. For students, especially undergraduates, ChatGPT offers a new way to support learning and research. It can explain difficult concepts, provide information quickly and help with academic writing. This makes ChatGPT an important tool in modern education (Chan & Hu, 2023). Students can use ChatGPT to get help with assignments, understand topics better and even draft essays or reports. Academic research, on the other hand, is the process of collecting and analysing information to answer questions or solve problems in a scholarly way, which helps to make informed decisions. It involves finding reliable sources, organising ideas, and presenting findings. Combining ChatGPT with academic research means students can use this AI tool to support their studies and improve their research quality (Oladokun *et al.*, 2024).

In Nigeria, undergraduate students face many challenges in conducting academic research. These challenges include limited access to resources, difficulty in understanding complex topics, and time constraints. ChatGPT has the potential to help overcome some of these problems in providing quick and easy access to information and writing support (Oyelude *et al.*, 2023). Undergraduate students also use ChatGPT for their final year projects, which are important research tasks before graduation. ChatGPT helps in providing information, suggesting research ideas and assisting in writing project reports. However, the way students use ChatGPT for these

projects can differ based on their research skills and familiarity with AI tools. Some students may use ChatGPT mainly for information gathering, while others use it for drafting, proofreading, and editing their reports (Wagwu *et al.*, 2023).

Students' views on the effectiveness and reliability of ChatGPT as a source of academic information are mixed. Many students find ChatGPT useful because it saves time and helps them understand complex concepts. However, some students find it hard to ask the right questions to get useful answers. Also, some students worry about the accuracy of the information, the risk of plagiarism and the fear of ghost writing in recent times. Others are concerned that over-reliance on ChatGPT might reduce their intellectual and critical thinking and problem-solving skills. Despite these concerns, some students continue to use ChatGPT as a helpful academic assistant (Panda & Chakravart, 2022).

Statement of the Problem

Academic research output among undergraduate students in Nigeria has been reported to be low. Many students struggle with completing quality research projects due to limited resources, lack of guidance, and poor research skills. This has raised concerns among educators and policymakers about the quality of higher education in the country (Makinde, 2024). Despite the availability of various emerging technologies, there is little information on how these tools are helping or hindering students in their academic work. The researcher has observed that many students at Ambrose Alli University, Edo State, may rely on online tools, including AI, to complete assignments and research projects. However, there are worries about whether students use these tools effectively and ethically.

Quite a number of empirical studies have been done on ChatGPT for academic engagement across various countries. For instance, Hend (2023) examined factors influencing ChatGPT adoption at Universiti Tunku Abdul Rahman (UTAR) in Malaysia, using the UTAUT model. The study found that performance expectancy and social influence significantly affected students' adoption behaviour, while perceived risk and entertainment had no significant impact. In Kenya, Chevose (2023) investigated usage trends at the University of Nairobi and discovered that both students and faculty used ChatGPT for research, information retrieval, and academic problem-solving. The study encouraged strategic investment in faculty training. Similarly, Chen, Liu, Zhang & Huang (2022) conducted a study at Tsinghua University in China, where they examined ChatGPT's role in research-related tasks among postgraduate students. The results showed that ChatGPT helped improve research speed and efficiency, particularly in literature review and idea generation. Still, ethical issues were raised, especially about the use of AI-generated citations, which often included non-existent or inaccurate references. In the same vein, Rodriguez, Martinez & Gomez (2024) carried out research at the National Autonomous University of Mexico, focusing on the impact of ChatGPT on STEM assignment completion. The study revealed that students were able to complete technical tasks faster with the help of ChatGPT, but the accuracy of the content was sometimes questionable, leading to concerns about the quality of student output and the need for more guidance on how to validate AI-generated information.

However, there appears to be a limited body of knowledge on how and the extent to which undergraduate students at Ambrose Alli University use ChatGPT for academic research and assignments. Therefore, this study aims to bridge that gap by examining the use of ChatGPT as a research tool among undergraduate students at Ambrose Alli University. It seeks to find out how students engage with ChatGPT in their research processes, the benefits they derive, the limitations they face, and the ethical concerns involved.

Objectives of the Study

The objectives of this study are to:

- i. examine the extent to which undergraduate students of Ambrose Alli University use ChatGPT for academic research
- ii. assess the perceived effectiveness and reliability of ChatGPT as a source of academic information among undergraduate users.
- iii. identify the challenges faced by students when using ChatGPT for academic research.

Research Questions

The following research questions are raised for this study:

- i. to what extent do undergraduate students of Ambrose Alli University use ChatGPT for academic research?
- ii. what is the perceived effectiveness and reliability of ChatGPT as a source of academic information among undergraduate students?
- iii. what challenges do undergraduate students face when using ChatGPT for academic research?

Hypotheses

- i. There is no statistically significant relationship between the extent of ChatGPT usage and the successful completion of academic research and assignments among undergraduate students of Ambrose Alli University
- ii. There is no significant difference in the perception of the effectiveness and reliability of ChatGPT as an academic research tool among undergraduate students.
- iii. There is no significant difference in the challenges faced by undergraduate students when using ChatGPT for academic research.

Empirical Studies

Since the arrival of ChatGPT, many researchers have studied how it is used in education. For example, Oladokun *et al.* (2024) studied the attitudes and experiences of undergraduate students using ChatGPT at Ignatius Ajuru University of Education in Port Harcourt, Nigeria. They used a survey method and collected responses from 103 students. The study showed that ChatGPT was becoming popular and helpful for saving time and providing information. However, it also found problems like giving outdated or unreliable information and not understanding human emotions. One limitation of the study is that it focused only on one university and didn't explore how students used ChatGPT for specific academic tasks like final-year projects or writing assignments. This leaves a gap for more focused studies like the current one.

In another study, Hend, (2023) investigated what influenced students at Universiti Tunku Abdul Rahman (UTAR) in Malaysia to use ChatGPT. The study used the UTAUT model and surveyed 200 students using an online questionnaire. The results showed that students were more likely to use ChatGPT if they believed it would help them perform better or if others around them supported its use. However, things like ease of use, fun, and risk did not strongly affect their decisions. A major gap in this study is that it focused more on why students adopt ChatGPT rather than how they use it for academic research or projects. This means there's still a need to understand the practical ways students use ChatGPT in schoolwork. Opeyemi et al. (2024) looked at how Nigerian university lecturers feel about using ChatGPT to assess students' work. They used a correlational design and selected 102 lecturers who had used ChatGPT. The data showed that most lecturers had a poor attitude and a low opinion of ChatGPT's use for assessment. However, this study focused only on lecturers, not students. This gap shows why more studies on student use of ChatGPT are needed.

Frank and Idowu (2024) carried out research at Nnamdi Azikiwe University in Nigeria to assess students' awareness, knowledge, and opinions about ChatGPT. Using a survey of 370 students, they found that most students understood how to use ChatGPT and often used it for research and academic work. However, they also noted concerns like plagiarism and a decline in critical thinking. The study suggested the need for ethical guidelines and awareness campaigns. One limitation of this research is that it mostly dealt with students' awareness and perception. It didn't study the actual benefits and challenges of using ChatGPT in research assignments or final-year projects. This makes the current study on usage patterns more relevant.

Theoretical Framework

This study is guided by Wilson's Information-Seeking Behavior Theory (1996), which explains how people search for and use information when they need to solve a problem or complete a task. According to Wilson, individuals go through a process of identifying their information needs, selecting sources, and using the information they find to achieve a goal. The theory also highlights that different factors such as access to technology, experience, motivation, and the difficulty of the task influence how people seek information. In academic settings, students often search for information to complete assignments, write seminar papers, or conduct research projects. This process now increasingly involves digital tools like ChatGPT, which students use to quickly find answers, generate ideas, and support their academic writing. The relevance of Wilson's theory to this study lies in its focus on how and why students turn to ChatGPT as a source of academic information. The theory helps to explain students' behaviour from realizing they need help with research to choosing ChatGPT over other traditional sources like textbooks or journals. It also helps the researcher examine the challenges students face while using ChatGPT, such as not knowing how to ask the right questions or receiving inaccurate answers. Adopting Wilson's framework, this study is better able to evaluate not just the extent of ChatGPT's usage among undergraduate students at Ambrose Alli University, but also the reliability students attach to it, and the obstacles that influence their academic research behavior.

Ambrose Alli University (AAU), Ekpoma

Ambrose Alli University (AAU) is a state-owned university located in Ekpoma, Edo State, Nigeria. It was originally established in 1981 by the then Governor of Bendel State, Professor Ambrose Alli, and was named after him in recognition of his contributions to education. The university offers a wide range of academic programs across various faculties, including Arts, Social Sciences, Education, Physical Sciences, Life Sciences, Management Sciences, Natural Sciences, Engineering, and Health Sciences. AAU is known for its commitment to academic excellence, research, and student development, serving thousands of undergraduate and postgraduate students from different parts of Nigeria and beyond.

Methodology

This study used a descriptive survey research design to find out how undergraduate students at Ambrose Alli University (AAU), Ekpoma, use ChatGPT for academic research. This method was chosen because it helps gather useful information from students without changing or influencing their behaviour. The study focused on 300 and 400-level students in the Faculty of Management Sciences. It specifically included students from the Departments of Public Administration, Banking and Finance, and Accounting because students at these levels are more involved in research and have more experience using digital tools like ChatGPT.

The total number of students in these departments was 1,110 (Public Administration = 310, Banking and Finance = 324, Accounting = 476). A multistage sampling technique was used to select the participants. First, the Faculty of Management Sciences was chosen. Then, three departments were selected within the faculty. Finally, a proportional sample of students was selected from each department: Public Administration (110 students), Banking and Finance (110 students), and Accounting (160 students). This gave a total sample size of 380 students.

To collect data, a structured online questionnaire was used titled: *Evaluation of the Use of ChatGPT as a Tool of Academic Research among Undergraduate Students* (EUCTARUSQ). The questionnaire was designed to collect information about how students use ChatGPT for academic work, such as assignments and final-year projects, how effective and reliable they think it is, and the challenges they face when using it. This instrument consisted of 28 items, rated on a four-point Likert scale (Strongly Agree, Agree, Strongly Disagree, and Disagree). Experts in the field reviewed the questionnaire to ensure it was valid and clear. To measure the consistency of the instrument, a reliability test was conducted using the Cronbach's Alpha method, which produced a reliability coefficient of 0.85, indicating that the instrument was highly reliable.

The questionnaire was then shared through Google Forms via each department's 300 and 400-level WhatsApp groups, with help from class representatives. The data collection lasted for two weeks, during which students were regularly reminded to respond. Participation was completely voluntary, and students were assured that their responses would remain anonymous and confidential.

At the end of the data collection, 350 students completed the questionnaire. The responses were downloaded,

carefully arranged, and coded for analysis. The data were analysed using the SPSS package (Statistical Package for the Social Sciences). To answer the research questions, descriptive statistics such as mean and standard deviation were used. Furthermore, inferential statistics, specifically Pearson Product-Moment Correlation Coefficient (PPMC), was employed to test the formulated hypothesis one, determining the statistical relationship between the extent of ChatGPT usage and academic assignment completion among undergraduate students. While hypotheses two and three were tested using One-Sample T-Test. The hypotheses were tested at a 0.05 level of significance, which helped determine if the results were statistically meaningful.

Results

Research Question One: To what extent do undergraduate students of Ambrose Alli University use ChatGPT for academic research?

Table 4.1: ChatGPT Use for Academic Research and Assignments

S/NO	Item Statement	Mean	SD	Remarks
1	I use ChatGPT to find topics for my research work	3.21	0.85	Agreed
2	ChatGPT helps me understand difficult research ideas	3.33	0.81	Agreed
3	I use ChatGPT to summarise and paraphrase research articles	3.29	0.80	Agreed
4	I use ChatGPT to get help with referencing and citations	2.15	0.54	Disagreed
5	ChatGPT gives me ideas for doing my assignments	3.40	0.77	Agreed
6	I often use ChatGPT to complete my school assignments	3.22	0.79	Agreed
7	ChatGPT makes me feel more confident in doing my school work	3.18	0.82	Agreed
Grand Mean		3.11	0.77	Agreed

The results in Table 4.1 show that most students use ChatGPT for different academic activities. Many of them agreed that they use it to find research topics (mean = 3.21), understand difficult research ideas (mean = 3.33), and summarises or paraphrase articles (mean = 3.29). Students also said that ChatGPT gives them ideas for assignments (mean = 3.40), helps them complete their work (mean = 3.22), and boosts their confidence in school work (mean = 3.18). However, students disagreed with the idea that ChatGPT helps them with referencing and citation (mean = 2.15). The overall average (grand mean = 3.11) shows that students generally **agree** they use ChatGPT regularly for academic purposes.

Research Question Two: What is the perceived effectiveness and reliability of ChatGPT as a source of academic information among undergraduate students?

Table 4.2: Perceived Effectiveness and Reliability of ChatGPT

S/NO	Item Statement	Mean	SD	Remarks
1	ChatGPT gives me correct and helpful answers	3.19	0.81	Agreed
2	I trust the information	2.05	0.51	Disagreed
3	ChatGPT provides ChatGPT saves me time when writing school work	3.42	0.75	Agreed
4	ChatGPT gives me useful ideas for research work	3.16	0.83	Agreed
5	I rely on ChatGPT for school-related questions	3.20	0.80	Agreed
6	ChatGPT helps me finish tasks faster	3.35	0.78	Agreed
7	ChatGPT gives me content I can develop and use in my work	3.27	0.79	Agreed
Grand Mean		3.09	0.77	Agreed

In Table 4.2, students agreed that ChatGPT is useful and effective in many ways. It gives helpful answers (mean = 3.19), saves time when writing (mean = 3.42), helps generate ideas (mean = 3.16), and allows them to finish tasks faster (mean = 3.35). Most students also said they use ChatGPT to answer school-related questions (mean = 3.20) and to get content they can build on (mean = 3.27). However, students were **not confident** about trusting the accuracy of ChatGPT's information (mean = 2.05). The grand mean of 3.09 shows that, overall, students find ChatGPT **effective and reliable** for their academic needs.

Research Question Three: What challenges do undergraduate students face when using ChatGPT for academic research?

Table 4.3: Challenges Faced When Using ChatGPT

S/NO	Item Statement	Mean	SD	Remarks
1	Sometimes ChatGPT gives wrong answers	3.39	0.80	Agreed
2	I find it hard to understand how to use ChatGPT professionally	3.21	0.83	Agreed
3	It's difficult to ask ChatGPT the right questions	3.18	0.79	Agreed
4	ChatGPT sometimes gives outdated and non-existent references	3.30	0.81	Agreed
5	I'm afraid of being accused of copying and ghostwriting when I use ChatGPT	3.15	0.78	Agreed
6	Using ChatGPT may reduce my ability to think for myself	3.34	0.77	Agreed

7	I'm worried that I depend too much on ChatGPT	3.28	0.76	Agreed
Grand Mean		3.26	0.79	Agreed

According to Table 4.3, students face several challenges when using ChatGPT. They agreed that it sometimes gives wrong answers (mean = 3.39), outdated or non-existing references (mean = 3.30), and that it can be hard to use properly (mean = 3.21). Some students also find it difficult to ask the right questions (mean = 3.18). Many expressed fears about being accused of copying or ghost writing (mean = 3.15), and some worried that ChatGPT might reduce their ability to think independently (mean = 3.34). Others also felt they were becoming too dependent on it (mean = 3.28). The grand mean of 3.26 shows that students generally **agree** that these are real challenges they face when using ChatGPT for academic purposes.

Test of Hypotheses

Hypothesis 1: There is no statistically significant relationship between the extent of ChatGPT usage and the successful completion of academic research and assignments among undergraduate students of Ambrose Alli University.

Table 4.4: Summary of Pearson r on the Relationship between ChatGPT Usage and Assignment Completion

Variables	N	Mean	SD	d.f	Correlation (r)	P-value	Decision
ChatGPT Usage	350	3.26	0.80	348	0.684**	0.01	Null Hypothesis Rejected
Academic Research & Assignment Completion		3.23	0.80				

Note:

- Pearson r-coefficient ± 0.00 – 0.39 = Weak
- Pearson r-coefficient ± 0.40 – 0.69 = Moderate
- Pearson r-coefficient ± 0.70 – 1.00 = Strong
- $p < 0.05$ = Significant

The correlation coefficient ($r = 0.684$) from the result in Table 4.5 shows a moderate and positive relationship between the extent of ChatGPT usage and the successful completion of academic assignments. The p-value (0.001) is less than 0.05, which means the result is statistically significant. Therefore, the null hypothesis is rejected. This means students who use ChatGPT more tend to complete their academic research and assignments more successfully.

Hypothesis 2: There is no significant difference in the perception of the effectiveness and reliability of ChatGPT as an academic research tool among undergraduate students.

Table 4.5: One-Sample T-Test: Perceived Effectiveness and Reliability of ChatGPT

Variable	N	Mean	Std. Deviation	Test Value	t	df	Sig. (2-tailed)
Perceived Effectiveness and Reliability	350	3.09	0.77	3.00	2.19	349	0.029

A one-sample t-test was conducted to find out whether undergraduate students perceive ChatGPT as effective and reliable for academic purposes. The average score ($M = 3.09$, $SD = 0.77$) was slightly above the neutral test value of 3.00, and the difference was statistically significant with $t(349) = 2.19$ and $p = 0.029$. Since the p-value is less than 0.05, we reject the null hypothesis. This means that most students generally agree that ChatGPT is helpful in their academic work. Even though some students may not fully trust all the information it gives, the overall perception is that ChatGPT is an effective and reliable academic tool.

Hypothesis 3: There is no significant difference in the challenges faced by undergraduate students when using ChatGPT for academic research.

Table 4.6: One-Sample T-Test — Challenges Faced When Using ChatGPT

Variable	N	Mean	Std. Deviation	Test Value	t	df	Sig. (2-tailed)
Challenges Faced When Using ChatGPT	350	3.26	0.79	3.00	6.16	349	0.000

A one-sample t-test was also carried out to examine whether students face challenges when using ChatGPT for academic research. The mean score ($M = 3.26$, $SD = 0.79$) was significantly higher than the neutral test value of 3.00, and the result was highly significant, $t(349) = 6.16$, $p < 0.001$. Since the p-value is far below 0.05, we reject the null hypothesis. This means that students do face real and noticeable challenges when using ChatGPT. The result confirmed that while ChatGPT is useful, it also presents several difficulties for academic users.

Discussion of Findings

The findings show that students widely use ChatGPT to support their academic research, especially to find research topics, understand complex ideas, and complete assignments. Most students agreed that ChatGPT helps them in various academic tasks. However, they disagreed that it helps with referencing and citation. This supports the work of Chan and Hu (2023), who noted that students use ChatGPT for quick access to ideas and explanations. Similarly, Wagwu et al. (2023) found that students rely on ChatGPT for content generation, although it may not always replace formal academic tools like citation software. The result also aligns with Oladokun et al. (2024), who observed that students used ChatGPT for fast information and writing help, especially when working under pressure.

Most students agreed that ChatGPT helps them finish tasks faster, saves time, and gives usable content. However, they expressed concerns about the accuracy of the information, with many not fully trusting the content it generates. This finding aligns with Frank and Idowu (2024), who reported that students found ChatGPT helpful but were worried about plagiarism and false information. Chen et al. (2022) also found that postgraduate students benefited from using ChatGPT for quick research, but raised concerns over inaccurate citations and AI-generated content that could not be verified. The finding highlights the need to use ChatGPT alongside other credible sources.

Students acknowledged several challenges, such as receiving wrong or outdated answers, struggling to ask the right questions, fear of being accused of plagiarism, and depending too much on AI for academic tasks. This shows that while ChatGPT is a helpful tool, it also has drawbacks that need to be addressed. This agrees with Panda and Chakravart (2022), who observed that students are concerned about ChatGPT's reliability and ethical implications. Also, Oladokun et al. (2024) found that users sometimes experience confusion when ChatGPT responses are misleading, and this reduces students' critical thinking. Makinde (2024) emphasized that while ChatGPT can enhance learning, over-dependence on it may negatively affect originality and mental engagement.

The results also showed a moderate and positive relationship between the use of ChatGPT and academic assignment completion. The result was statistically significant ($r = 0.684$; $p = 0.001$), meaning that students who use ChatGPT more are also more likely to complete their assignments successfully. This is supported by the study of Chevose (2023), who found that ChatGPT helps both students and faculty in academic problem-solving. Similarly, Hend (2023) found that students adopt ChatGPT more when they believe it improves performance. The present study confirms that ChatGPT use contributes positively to academic outcomes when applied appropriately.

Conclusion and Recommendations

This study has shown that undergraduate students at Ambrose Alli University use ChatGPT actively in their academic work. ChatGPT is seen as a helpful tool for writing, learning, and completing school tasks, as shown in the study. However, students do not fully rely on it for research accuracy, referencing, and deeper academic analysis. Some students also face challenges such as fear of plagiarism, ghost writing, over-dependence, and misuse. Despite these issues, ChatGPT still contributes meaningfully to students' academic research. The study confirmed that when used appropriately, ChatGPT can enhance research productivity and assignment completion among undergraduates.

Based on the findings, the following recommendations are made:

1. The university should organise workshops and tutorials to teach students how to use AI like ChatGPT positively and effectively without abuse or academic misconduct, especially in areas like referencing, methodology, and ethical writing.
2. Lecturers should guide students to always verify ChatGPT's responses with other credible

sources and encourage them to develop their ideas rather than copy AI-generated texts.

3. Research and writing courses should include basic AI literacy, helping students understand the strengths and limits of tools like ChatGPT in academic work.
4. Clear policies should be set by the institution on the ethical use of AI tools. Students should be sensitised to issues such as plagiarism, ghost writing, and over-reliance to maintain academic honesty.

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