

Sentiment Analysis and Topic Modeling of AI Policy Discussion Forum

January 4, 2024

A. INTRODUCTION:

The online course, "AI for Students: Best Practices, Guidelines, and Compliance," which began during the 5th week of the 1st Term, SY 2023-2024, has successfully enrolled 10,277 students. Its primary objective is to assist students in comprehending and adhering to the AI Tool Usage Policy implemented by our institution. In addition to the policy, the course offers a wide range of valuable resources and helpful links to enable students to make the most effective use of AI tools. It also encourages students to actively participate in the discussion forum, where they can share their opinions and ideas on how to further enhance the policy.

B. ONLINE DISCUSSION FORUM:

Our online discussion forum has seen active participation from our students. As of December 30, 2023, they have created 1,084 posts across 495 different topics. To maintain the quality of the data, 327 posts were carefully reviewed and after cleaning up the data, 298 valid entries were retained. Following this, three key steps were carried out:

1. Created a word cloud, which is a visual representation of the most frequently used words in the posts.
2. Performed a sentiment analysis to understand the overall feelings and attitudes of our students towards our policy, based on their posts.
3. Used a technique called Latent Dirichlet Allocation (LDA) to predict the main topics being discussed in the forum.

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D.SENTIMENT ANALYSIS RESULTS:

The sentiment analysis revealed that most of our students hold positive sentiments toward our AI Tool Policy. It is truly encouraging to witness such an optimistic response from our students. To ensure a nuanced understanding of student feedback, the Lemmagen Lemmatizer was utilized to analyze the core meaning of their words, and VADER (Valence Aware Dictionary and sEntiment Reasoner) was also applied to capture the emotional tone behind them. This allowed us to see not just if students liked the policy but also how strongly they felt and what specific aspects resonated with them.

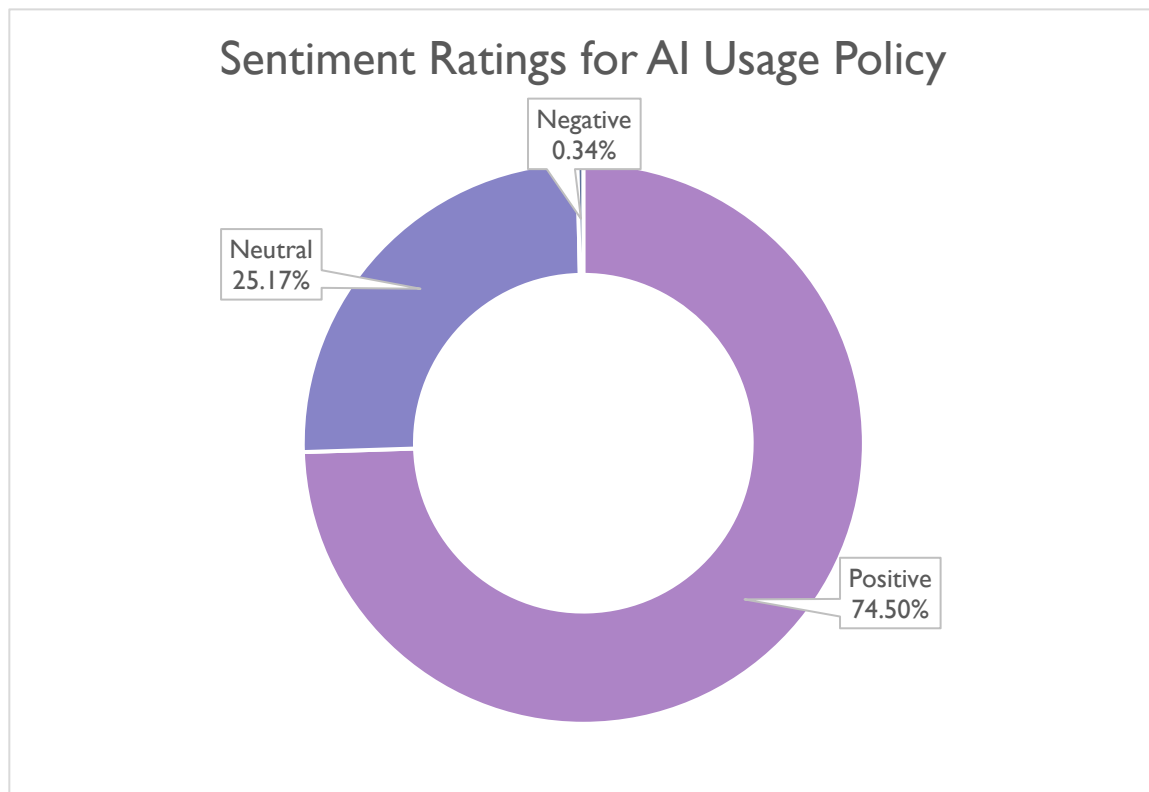


Figure 2 The donut chart reveals that a significant majority of sentiments towards AI usage policy are positive.

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E. LATENT DIRICHLET ALLOCATION (LDA) MODEL:

The LDA model was used to discover latent topics and themes that occur in the discussion forum. Through this model, the grouping and summarizing of text data for better understanding were made possible. Below are the themes that emerged from the discussion forum:

THEME 1: AI IN EDUCATION

- Words: ai, tool, student, u, course
- This topic relates to the use of artificial intelligence (AI) tools and courses in education, specifically targeting students.

THEME 2: AI TOOLS AND THINKING

- Words: ai, tool, student, think, use
- This topic focuses on the use of AI tools and encourages critical thinking among students.

THEME 3: AI POLICY AND ETHICS

- Words: ai, policy, usage, tool, ethical
- This topic explores the policy and ethical considerations surrounding the use and implementation of AI.

THEME 4: AI POLICY, SUGGESTION, AND COURSES

- Words: ai, suggestion, policy, course, student
- This topic discusses AI policy, provides suggestions, and suggests relevant courses for students.

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THEME 5: AI POLICY, USAGE, AND STUDENTS

- Words: ai, student, policy, use, usage
- This topic delves into AI policy, its usage, and its impact on students.

THEME 6: AI POLICY, TOOLS, AND IMPORTANCE

- Words: ai, policy, tool, good, important
- This topic emphasizes the importance of AI policy and the use of appropriate tools.

THEME 7: AI POLICY, EDUCATION, AND SCHOOLS

- Words: ai, policy, especially, student, school
- This topic highlights AI policy, its relevance to education, and its impact on schools.

THEME 8: AI USE, COURSES, AND STUDENTS

- Words: ai, use, course, student, tool
- This topic focuses on the practical use of AI, relevant courses, and its impact on students.

THEME 9: AI UNDERSTANDING, STUDENTS, AND TOOLS

- Words: ai, understand, student, make, tool
- This topic explores the understanding of AI among students and the tools they use.

THEME 10: AI QUESTION, GRATITUDE, AND CONCERNS

- Words: question, ai, thank, far, concern
- This topic represents questions, gratitude, and concerns related to AI.

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To gain a better understanding of the importance and implications of the identified themes in the context of the provided LDA model results, read the extracted insights:

1. **AI IN EDUCATION:** The theme of AI in education **suggests that the integration of AI tools and courses is relevant to the learning experience of students.** By exploring this theme further, we can ask questions such as: How does the use of AI tools enhance student learning? What are the potential benefits and challenges of incorporating AI in education? How does AI impact the future of education and the skills required by students?
2. **AI TOOLS AND THINKING:** This theme **highlights the connection between AI tools and critical thinking.** We can ask questions like: How do AI tools promote critical thinking skills among students? What are the implications of relying on AI tools for problem-solving and decision-making? How can educators effectively integrate AI tools to foster critical thinking in students?
3. **AI POLICY AND ETHICS:** The theme of AI policy and ethics **raises important questions about the responsible use of AI.** We can explore questions such as: What are the ethical considerations in developing and implementing AI policies? How can AI be used in a way that respects privacy, fairness, and transparency? What are the potential societal impacts of AI, and how can policy frameworks address them?
4. **AI POLICY, SUGGESTION, AND COURSES:** This theme suggests that there is a need for AI policy development, along with **relevant courses and recommendations for students.** We can ask questions like: What should be

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included in AI policy guidelines for educational institutions? How can AI courses be designed to meet the needs of students and prepare them for the future workforce? What are the best practices for integrating AI policy and courses in educational settings?

5. **AI POLICY, USAGE, AND STUDENTS:** This theme **emphasizes the relationship between AI policy, its usage, and its impact on students.** We can explore questions such as: How does AI policy affect the access and usage of AI tools by students? What are the implications of AI policy on student privacy and data protection? How can AI policy support equitable access to AI resources for all students?
6. **AI POLICY, TOOLS, AND IMPORTANCE:** This theme **highlights the significance of AI policy and the use of appropriate tools.** We can ask questions like: What are the key elements of effective AI policy? How can AI tools be evaluated for their reliability and accuracy? What are the implications of using AI tools without proper policy guidelines?
7. **AI POLICY, EDUCATION, AND SCHOOLS:** This theme **suggests that AI policy has implications for education and schools.** We can explore questions such as: How can AI policy support the integration of AI in educational settings? What are the challenges and opportunities of implementing AI policy in schools? How can AI policy ensure equitable access to AI resources across different educational institutions?
8. **AI USE, COURSES, AND STUDENTS:** This theme **focuses on the practical use of AI, relevant courses, and their impact on students.** We

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can ask questions like: How can AI be effectively integrated into different subject areas and disciplines? What are the potential benefits and limitations of AI courses for students? How can AI use and courses be tailored to meet the diverse needs of students?

9. **AI UNDERSTANDING, STUDENTS, AND TOOLS:** This theme **explores the understanding of AI among students and the tools they use.** We can ask questions like: How can students develop a deeper understanding of AI concepts and principles? What are the best approaches to teach AI to students? How can AI tools be designed to enhance student learning and engagement?
10. **AI QUESTION, GRATITUDE, AND CONCERNS:** This theme **represents questions, gratitude, and concerns related to AI.** We can explore questions such as: What are the common questions and concerns people have about AI? How can gratitude be expressed for the positive impact of AI? What are the potential risks and challenges associated with AI, and how can they be addressed?

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F. APPLICATION SCENARIOS:

The themes identified and insights derived can act as starting points for a range of activities, including but not limited to:

- Workshops for Students and Faculty
- Focus Group Discussions
- Faculty Meetings and Orientations
- Curriculum Reviews
 - Syllabi Updates
- Research Initiatives
- Development of Research Agendas
- Budget Planning and Resource Allocations
- Debates
- Other Related Engagements
 - AI Policy Review

G. STUDENTS' POSTS:

Below, you'll find a selection of sample posts from our students. These examples are based on actual posts they've uploaded and have been chosen at random. To respect our data privacy policy, all identifying information has been removed.

• STUDENT 01

This post is intended to give applause to the organization behind this initiative to continuously spread awareness about the pros and cons of AI

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Usage. As a student, I appreciate how the College is being innovative and open-minded in accommodating new trends in online security, teaching techniques, and data privacy. Hence, please continue this kind of initiative as it gives us a sense of safe space.

- **STUDENT 02**

At first, I was pretty skeptical about how all of this AI usage can benefit us. But after going through the modules, it did make me susceptible to thinking that it can have its own set of benefits, but it is also a reminder for us to not abuse these type of tools just because it exists.

- **STUDENT 03**

I think the AI Usage Policies we have today are great and do not need any revisions. I am glad that it covers how to be able to use AI safely and the institution's limits on using it as a student. It is important to remember that AI can be used as a learning tool but not to be dependent on it.

- **STUDENT 04**

I can say that this course/ policy has been an eye-opener for me as it taught me to be responsible and ethical when using AI applications/ tools. To be more specific, one of the things that I have learned is how these tools can benefit me as a student, as they can enhance the way I understand topics in a more in-depth manner. It was also a reminder that I must always ensure my work remains original with the help of this course. One of the ways that I can do that is by utilizing these tools only as a means to jump-start an idea whenever I have no ideas left, and not use or paste everything the AI tool has provided in order to uphold academic integrity. I also had the opportunity to familiarize myself with its usage policies that I can apply while using the following tools.

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- **STUDENT 05**

I totally agree with the policies laid within this AI Usage Policy course. AI really does help us students achieve and finish our tasks, but we also need to use it properly and not abuse it to the point that we are dependent on it rather than just using it as help with our tasks.

- **STUDENT 06**

I think CSB is heading towards the right path in educating their students on how to ethically use AI, especially with the trend of it being used especially in academe. Many worry that this will take away the authenticity and effort in work, but I believe that with proper practices and regulations implemented, this can be a very resourceful tool in education that can be utilized for both students and staff to gain a lot from.

- **STUDENT 07**

I believe that having the Principle of Respect for Intellectual Property Rights of Others was a very good move for the school to make, especially considering how many students are part of the art school or have created a product. Having the school implement this in order to protect the students is good, especially in the long run.

- **STUDENT 08**

Through the course, AI for Students: best practices, guidelines, and compliance, I have gained a deeper understanding of how to utilize these cutting-edge technologies properly. This policy further showed me that we should use them to advance our education and increase our knowledge because that is how we grow. Last but not least, it has helped me learn how to utilize these AI tools safely and securely, which is beneficial for everyone.

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- **STUDENT 09**

As a student of Benilde, I realized we should AI responsibly and should apply its ethical and effective usage. The AI has the potential to significantly affect people's lives. AI is developed and applied to advance individual and societal well-being thanks to ethical standards. This involves guaranteeing safety, preserving privacy, and avoiding prejudice and discrimination. Also, AI is here to help us, especially with our schoolwork as students, but to be responsible students, we should not depend on AI. We must also do our part in providing our thoughts, answers, and opinions. AI is helpful but it still lacks some parts, and that is human emotion.

- **STUDENT 10**

I believe AI should be implemented in school in a safe, regulated, and controlled way. Teachers cannot stop the usage of AI, it is simply inevitable which is why I'm thankful for schools like Benilde, opening their minds to the usage of AI because it can be a very helpful tool.

- **STUDENT 11**

I appreciate the school's effort to keep up with the modern advancements in technology, especially at a time when AI is on the rise. I find it helpful to learn more about the proper usage of AI in the aspect of education, and the policy that goes along with this.

- **STUDENT 12**

Being part of SDG, we are in the proactive side in terms of using AI Tools in our studies. Therefore, going through this course helped me understand further the limitations at the same time tips on how to effectively use AI to help us further broaden our knowledge and improve our outputs.