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PERCEPTION OF AI-GENERATED ART: TEXT ANALYSIS OF ONLINE DISCUSSIONS

Abstract. In this work we analyze comments on three subreddits related to AI-generated art to understand how people perceive the ability of AI to create art and the topics and moods of discussions in the context of widespread usage of pre-trained models. We used computational text analysis techniques such as LDA topic modeling and sentiment analysis with sentiment lexicons. As a result, we find that discussions on technical topics and descriptions of AI-generated art were mainly positive, while discussions on socio-cultural issues were mainly negative and took place in a subreddit focused on defending AI art. The findings suggest that Reddit users are interested in both the artistic and socio-cultural implications of AI-generated art, finding it risky and questionable.

§1. Introduction

1.1. Problem relevance. The problem of the relationship between AI and humans, according to the current conclusions and discussions of scholars, is becoming increasingly relevant in light of the development of machine learning and neural network algorithms [5, 12]. Its widespread use would replace some aspects of human labor and abilities [22]. Currently, generative models such as Midjourney or ChatGPT, being available for mass use, can generate types of art such as paintings and pictures, and create their own works of art, including the ability to generate both pictures and texts [16, 21]. In turn, the ability to create works of art is considered an activity that only a person is capable of, because of his or her ability to think comprehensively and creatively [2, 6]. Therefore, studying how people perceive the fact that AI can create art is important both for understanding current moods about the development of AI technologies and for comprehending how to use them correctly in the current social

Key words and phrases: AI art and midjourney and perception and text mining and topic modeling and sentiment analysis and reddit.

context when AI technologies are available for mass usage. Hence, this pilot study is focused on exploring how people perceive the use of AI in art production.

1.2. Related work. Studies on the relationship between AI and society and its perception and influence on human activity can be divided into several sub-areas that differ in terms of emerging problems and discussions of the role of AI. Since we are interested in the analysis of perception, and not the significance of AI's ability to generate art in general, we will focus mainly on research that directly explores the interaction between humans and computers and the perception of art created with AI-models. We defined perception as an emotional attitude towards something (an object or an event) expressed in a social context (through communication or interaction) [3,28]. Thus, regarding the study of human-computer interaction and AI we have distinguished two main parts. The first is the use of AI technology in public spaces and how people interact with it. Another aspect is how people perceive and evaluate art created by AI algorithms compared to human-created art without knowing who created it, the so-called HCI experiments. These ideas are similar to the Turing test, which tests whether people perceive AI as human [20].

Research on public perception of AI technologies has examined their usage for convenient interaction. Leshkevich and Motozhanets (2022) [19] studied the impact of the digitization of cultural heritage, identifying two opposing groups: "AI-enthusiasts" and "AI-alarmists". The former consider AI as an opportunity to solve routine tasks that do not require intellectual work, leaving more complex tasks for humans. However, the problem of unpredictability remains because of the nature of forecasting and learning algorithms that work according to the laws of probability. The model's outcome cannot always be certain and errors may occur. Continuing this idea, Yeh et al. (2021) [29] conducted an empirical study on the perception of AI among educated people in Taiwan. Education was found to significantly influence perception, with educated individuals being more confident in the introduction of AI but also considering it risky. This attitude played a role in the sustainable development of an AI city in Taiwan. Overall, the social perception of AI remains questionable, with both optimistic and negative attitudes being encountered, and questions about its consequences for people remaining as AI technologies develop.

The perception of AI was also studied in experimental settings. Hong and Curran (2019) [18] used Schema Theory and "Computers as Social

Actors" Theory to study bias towards AI art compared to human works. Participants in their experiment evaluated images without knowing the identity of the author (AI or human) and were able to distinguish between the two. Human-created artwork was evaluated higher than AI-created art in terms of personal style, composition, degree of expression, and aesthetics. Similarly, Ragot, Martin, and Cojean (2020) [24] conducted a similar experiment and found that people negatively perceived AI-generated art while human-made art was evaluated significantly higher. These findings suggest that AI is not yet able to fully replace art created by humans in terms of assessment and aesthetic perception, at least by 2020. In addition, research on attitudes towards generative AI models has shown that there are positive views on its use in innovative areas and in simplifying routine, but there are questions about its use in some highly skilled labor and education with the risk of reducing students' skills [16, 25].

In summary, the previous research show that educated individuals view AI positively for its ability to replace routine work and create certain solutions for innovation but are pessimistic towards education and highly skilled labor. However, the development of AI is considered risky, resulting in mixed emotions of enthusiasm and anxiety [17, 30]. Many studies mention that art created by AI is currently perceived as inferior to human-made art. Thus, it can be concluded that AI, at least currently, cannot entirely replace artistic products created by people, and there are contradictions in the quality and aesthetics of both types of works.

Taking all of the above into account, we would like to combine the ideas of studying the social perception of AI technologies and their implementation in art production. In this regard, we will conduct an explorative pilot study and investigate the perception of these processes on the Internet, in particular, in online discussions, since there have been no studies on what people think directly about AI technologies in art. We chose the online forum because online discussions are a good source of materials reflecting people's opinions [11]. We also believe that the phenomenon of image-generated neural networks availability for mass usage should be studied on the place where all potential users of this technology discuss their experience and thoughts about its overall performance and influence [10]. The results could help to understand the situation and structure of discussions among Internet users and provide insights for further research.

§2. Data collection and methods

For our purposes, we chose Reddit as the primary source of data because it is the most popular social news and forum website [8], where users are able to communicate with each other and share information using chats and comments below each post made by users. For instance, we will use subreddits dedicated to AI in general and AI-generated art. Inspired by the study of mental health communities on Reddit by Park, Conway and Chen (2018) [23] and tweets of early ChatGPT adopters by Haque et al. (2022) [16], we also ask research questions related to the topics and sentiments of the discussions on the subreddits related to AI art: What are the topics discussed by the users in the subreddits related to AI art discussions? What are the sentiments of the comments of users in the subreddits related to AI art discussions?

Our units of analysis are the comments of users under the posts in the subreddits with themes directly related to AI-generated art that can be manually defined by their name or description. To parse the comments, we used package "RedditExtractor" for R Language which allows us to download posts from subreddits and its metadata with comments including comment rating and time. As a result, we parsed "r/aiArt", "r/AIGeneratedArt" and "r/DefendingAIArt" subreddits as the most popular ones (more than 4000+ followers) which discuss the art created with AI technologies as well as argue about its quality. For each subreddit we parsed comments of the 1000 most discussed and popular posts (defined by the number of votes). Overall, 14039 comments were downloaded.

We used computational methods of text analysis for the Reddit users' comments analysis. In particular, we used topic modeling to determine the main topics in discussions and sentiment analysis to explore how users perceive certain news or posts about AI in art. For data pre-processing we used the R package "tidyverse". We tokenized comments into separate words and removed ones without meaning such as "http", "https" or "www" and English stop words.

To determine the topics that can potentially be discussed in subreddits, we used the Latent Dirichlet Allocation (LDA) algorithm for topic modeling [4]. We used the "mallet" package for the R programming language to obtain sufficient performance of LDA. To define the optimal number of topics, we used the "ldatuning" package that allows to compare several LDA models depending of the number of topics used based on metrics such as

symmetric KL-divergence [1] and perplexity [7], and Latent Concept Modeling [9] and Gibbs sampling algorithm [13] to maximize the number of topics. To prepare data for topic modeling, we used the "udpipe" package to extract only nouns and adjectives from comments to avoid confusion in terms of verbs that do not attach much importance to comprehend the topic. The model was trained with 500 iterations and with the number of topics from 10 to 30. Hyperparameter optimization was performed starting with beta = 0.1 and alpha sum = 5.

For sentiment analysis we used sentiment lexicons from the "tidytext" package in R. The approach of using a sentiment lexicon is suitable for the explorative purposes that we are pursuing [26, 27]. We decided to use an ordinal sentiment lexicon with a range from -5 (very negative) to 5 (very positive) from the AFINN lexicon [15].

§3. Results

After all procedures with the comments related to tokenization and lemmatization, the following statistics were obtained. The richest subreddit in terms of unique words is the "r/aiArt" subreddit; it contains 11159 unique words that occur 151399 times in total in all comments. The second is "r/DefendingAIArt" with 7321 unique words and 77764 occurrences, and the third is "r/AIGeneratedArt" with 2496 unique words and 8831 occurrences. Overall, we have obtained 237994 word occurrences and 14155 distinct words. The mean length of a comment was 17 words for all comments, and the median length was seven words, which is usual for such text as a comment.

3.1. Topics in the subreddits.

3.1.1. *Defining the number of topics and model training.* To determine the optimal number of topics, we ran metric calculations for 10 to 30 topics. A larger number of topics would be unreasonably complex for analysis and interpretation, and a smaller number would simply not be informative. Moreover, the number of topics from ten to thirty, as expected, could give us an opportunity to evaluate the trends in the metrics' behavior. Results of our experiments are presented in Figure 1.

As we can see, the most influential extremum appears at 14 for maximizing the metric "Griffiths2004", and at 15 for minimizing the metric "CaoJuan2009". In addition, on 19 we can observe a change in the behavior of the "CaoJuan2009" line. As a result, we selected 15 topics for analysis,

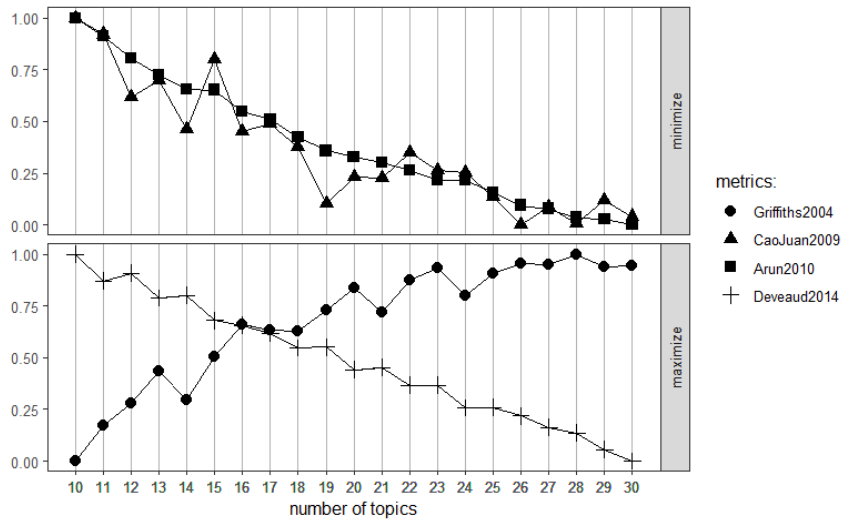

Figure 1. Comparison of LDA models depending on the number of topics.

because, first, the trend change occurs at points 14-15, and second, this number is sufficient for further interpretation, as our goal is to analyze the themes as well as to model them. Next, we optimized hyperparameters of the model after 500 iterations on every 20th after 50 burn-in iterations. After that, we trained our model on previously obtained text corpora.

3.1.2. *Description of topics.* For each topic the label was assigned subjectively, based on the list of the most probable words (Table 1). The dash instead of a label was placed if the list of words was not meaningful and the name could not be given.

We identified and labelled 14 of the 15 topics for the comments of the subreddits. We did not select all topics for further analysis. For example, Topics 7 and 14 present technical definitions or details about neural networks such as Midjourney, Topic 3 describes technical details of websites and URLs from the comments, Topic 11 represents words from spam comments. The mentioned topics are not interesting for our research question, so we did not discuss them in detail.

Table 1. Topics for the subreddits about AI-generated art.

#	Label	Top 15 Words
1	Power & Economic Relations	people, job, world, power, system, labor, money, capitalism, country, social, market, left, group, society, change
2	Fantasy	story, interactive, soul, world, castle, first, movie, god, painting, king, online, use, drug, year, book
3	Technical Details	com, reddit, comments, gt, amp, comment, twitter, aiart, source, instagram, title, file, context
4	AI Artistry	art, artist, people, ai, fairst, work, human, thing, way, tool, new, time, idea, real, many
5	Reactions	prompt, image, great, cool, style, good, picture, lot, result, thank, time, right, photo, nice, lol
6	Art Description	prompt, detail, realistic, lighting, color, beautiful, k, portrait, dark, body, space, blue, cinematic, full, artstation
7	Midjourney Guide	diffusion, stable, midjourney, look, free, sure, app, first, name, discord, second, website, man, little, version
8	Copyright Issues	copyright, work, law, music, case, use, person, author, legal, court, infringement, etc, machine, intellectual, ai
9	-	time, season, year, day, re, don, last, real, friend, can, great, old, gif, movie, game
10	Debates	sub, post, comment, people, rule, r, ai, mod, community, debate, user, art, aiwar, argument, subreddit
11	Spam	message, question, group, generator, concern, ai, page, post, list, moderator, day, please, link, cree, great
12	Industry & Business	artist, work, style, ai, art, company, model, people, technology, right, fairst, use, money, new, source
13	Machine Learning	image, model, datum, training, different, term, text, dataset, language, word, file, human, name, question, new
14	Image Creation Issues	amp, bad, hand, leg, dig, base, cell, source, brush, finger, draw, fail, format, hour, width
15	Social Issues	people, thing, time, good, think, guy, future, shit, right, child, first, sure, world, bad, job

Let us move to the topics that, in our opinion, depict and describe the feedback on the works produced by AI algorithms. Topics 5 (Reactions)[1] and 6 (Art Description)[2] would be referred to as such because they mostly relate to the descriptions of the works but what is interesting is that they contain mainly positive words and thus provide favorable feedback to the art-generated pictures posted on subreddits. We found that the word "prompt" which appears in both topics refers to the queries of words for AI-generators which authors or users use for generating art. As we hypothesized, other words are often used as the settings of this request, and that is why they appear together in these topics.

Since our goal is to identify social issues related to AI and its ability to generate art, which could be discussed among selected users of the subreddit, we focused on Topic 1 (Power & Relations), Topic 4 (AI Artistry),

[1]"Hi! This is a composite of multiple variations layered over in Photoshop, taking different parts from different pictures. The river, for instance, is from a wholly different picture and color-corrected and integrated in. There's also the usual overpainting. My process is explained (link). Hope you like it!"

[2]"Prompt = a post-apocalyptic view of a long los angeles city street, green lush overgrowth, cinematic, dramatic, composition, sunny sky, brutalist, hyper realistic, epic scale, sense of awe, hypermaximalist, insane level of details, artstation HQ"

Topic 8 (Copyright Issues), Topic 10 (Debates), Topic 12 (Industry & Business) and Topic 15 (Social Issues). Topic 2 (Fantasy), Topic 3 (Technical Details), Topic 7 (Midjourney Guide), Topic 13 (Machine Learning) and Topic 14 (Image Creation Issues) relate to specific subcultural or IT issues, which is not suitable for our research; therefore, we will not analyze them in detail.

Topic 1 "Power & Economic relations" is focused on the discussion about politics and power processing. For example, looking at the most typical comments for this topic *"Problem is that capitalism incentivizes greed and excess and every other system we've tried has the same pitfalls: greed and excess among elites at the expense of the masses, who suffer under extreme inequality. [...] The Emperor and the oligarch are one and the same. There are the rich and there are the poor."* we can observe that, indeed, comments are related to the discussion about the economic and political issues related to technological progress in the digital sphere, also touching on the topic of AI opportunities in the current situation.

In Topic 4 "AI Artistry", comments are mostly related to a more general problem concerning whether there can be AI, and the people who use it to create art can be considered as artists on a par with ordinary artists who draw paintings by hand. As you can see in the sample[3] of the most typical comments, the problem is being discussed quite seriously, since AI is currently becoming a tool for working with art, and there is no general solution for how to perceive it (as real art or more like a copy of it).

Topic 8, "Copyright Issues", discusses the legal status of paintings that are created with the help of AI. It is raised, as we can see in the typical comment[4], because AI for generating and working with paintings learns

[3]"You literally lightly called out all artists as hobbists, can you even vaguely see why this is problematic? [...] Nothing would ever stop an artists from making art for the joy of it, even if they were never compensated again. They were basically claiming that people won't even enjoy art as a hobby. They are wrong."
"I think most of the debate about AI art is that it takes from other creators and that nothing truly original is created. There's no direct, "real" expression of the human mind onto a medium. Other than typing an idea into a machine that then does all the creative work. It's not so much as whether or not AI art is art, but rather are people who produce it artists. Or should they lay claim to the product as if it's their own creation."

[4]"Copyright is automatic on the creation of a work. Registration is not required but in the US it's a formality to be able to claim damages and legal costs in case of a dispute. [...] The problem is that the law is well established that machine processes can't be granted copyright. Thus there can't be any copyright in AI generated images as they are the results of a machine process. That doesn't mean that text and arrangement of

from the works of real artists, and can potentially copy them, including style and ideas. And so far, as we can see, everything rests on the fact that the copyright for full-fledged AI-generated pictures cannot currently be owned, since they are created by machine, and not by a person to whom the copyright can be extended.

In Topic 10, "Debates", all the most likely comments directly relate to this topic, since in them the authors say that in the pro-AI subreddit where the discussion is taking place, and most likely using rudeness, members and their rules do not allow any disputes about issues related to AI and the correctness of its use: *"You ought to let dissenting opinions within the pro-AI community. We do. That's why we made another sub for it;this sub will just become a bregading community [...] That or remove the rules about speaking freely and allowing politics (the debating if ideas) as you're just paying lipservice to the words. I already explained that those are for people to speak freely about Pro-AI speech and Pro-AI politics without worrying about getting attacked constantly."* We assume on this basis that in some of the subreddits there is a strict ban on discussing this topic, which indicates a clear position about AI, in art in particular, namely that it has the right to be used in the generation of art.

For Topic 12, labelled as "Industry & Business"[5], the comments are devoted to a discussion about the place of the so-called "AI artist" in the modern art industry. First, we see a certain self-identification of people who use AI to create art, and their opinion about their current position among other artists in the industry. And second, as we can see, there is a discussion of the problem of how the capabilities of AI in art can be used for commercial purposes.

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a comic book can't be granted copyright (as there may be human authorship). It just means that the AI images themselves will remain unprotected. Thus anyone can use them to add their own text and arrangements and then register the resulting comic. The AI images still won't be copyrighted."

[5]"No pro-AI artist I've seen has claimed to speak for all artists. From what I've seen, we all know full well we're in the minority. If anything, it feels like the anti-AI artists are the ones trying to speak for all artists and brush us under the carpet. Case in point: Then there's the "artists get inspired by others all the time. what's the big deal?" That question means you're not an artist or not much of one."
"being excluded from training data would be the only way to retain your commercial value as an artist. It would be the only way to stop AI from replicating their style (given that it's truly unique and not already a chimera style from different artists). Commercial value will probably not be affected anyway since a copy is, in the end, a copy and corpo artist don't really use their own style anyway in corpo projects."

The last topic we have highlighted, Topic 15 “Social Issues” discusses issues related to social issues about gender, the labor market, politics, and even moral questions about which things are right and which are not, while linking this with the development of technology. For example, the typical comments for this topic *"i'm female (of 40+) and it's obvious to me that OP wants people to think sexual things about her photos. LoL. Nothing wrong with that! i mean it is not shameful to want sexual attention, nor is it shameful to give someone sexual attention who is vying for it. i wish female's could express their sexuality and sensuality without being slut shamed (not happening here that i see)... AND without being white-knighted/virgin-shielded *(treated like helpless children in need of protection) by some man who assume a woman cannot celebrate sexuality (and even lewdness) as freely, shamelessly, and comfortably as a man (which you seem to be doing)."* is mainly related to gender issues. Perhaps the discussions and comments that got into this topic are related to common current social moments, and therefore we can observe these comments. But since they ended up in subreddits dedicated to AI-generated art, we can assume that after all these comments ended up in thematic posts related to the current position of AI in the real social world.

In the overall picture, the topics that seemed to us to be important and affecting social issues at first glance and the words that most likely form them are actually such. We have seen this in the example of the most likely comments that relate to a particular topic, and at the same time they touch on quite important issues that relate to both the place of AI and its ability to reproduce art in the modern world and industry, its position relative to a person and an ordinary artist, as well as the position of "AI artists”, which, as we found out, have their own identification.

3.1.3. *Comparison of subreddits for topics.* After analyzing the topics, we explored if the distribution of the topics in subreddits depicts the purposes of the subreddits. To do this, we calculated the distribution of comments by topic and subreddit, taking the average probability by topics for each subreddit. We calculated it as the mean of the comments' probability to appear in a topic. As a result, we compared these distributions within each topic between subreddits (Figure 2).

From the graph it could be observed that for the topics which are mostly descriptive or technical, such as 2 (Fantasy), 5 (Reactions) and 6 (Art Description) we have got the predominant subreddits “r/aiArt” and “r/AIGeneratedArt”. We can suppose that these subreddits focus more on

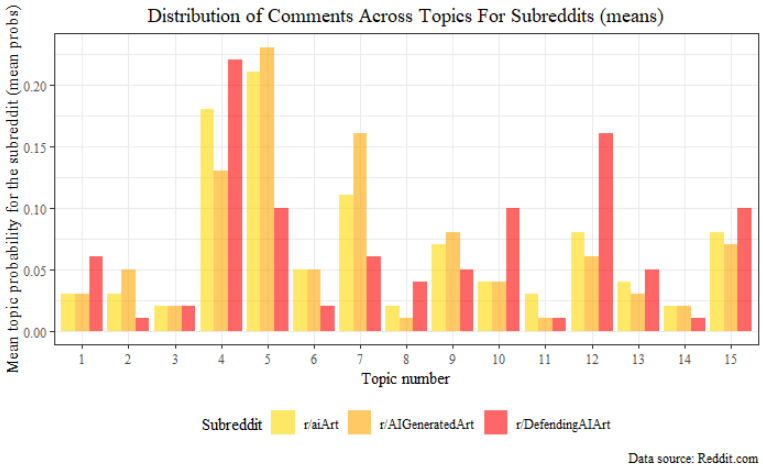

Figure 2. Distribution of Comments Probabilities Across Topics for Subreddits (means).

discussions and posts about the pictures themselves, made or generated with or using AI, than on news about them or any other issues. This is confirmed by the words and comments specific to these topics. On the other hand, we have socially oriented topics such as 1 (Power & Relations), 8 (Copyright Issues), 10 (Debates), 12 (Industry & Business) and 15 (Social Issues), which are dominated by comments from the "r/DefendingAIArt". Thus, we can assume here that this subreddit is just focused on discussing issues related to the role of art created by AI, the people who do it, their perception, and in different contexts – ranging from economics to social issues.

One exception is Topic 4 (AI Artistry) and Topic 13 (Machine Learning), which are almost equally distributed across our subreddits. The first one touches upon the question of the status of AI and the art created by it or with the help of it is discussed regardless of whether the subreddit is a "pro-AI activist," as it was written in one of the comments above. Topic 13, the theme of methods and models as well as data for training and working with neural networks for image generation is expected to be touched upon in all subreddits as well.

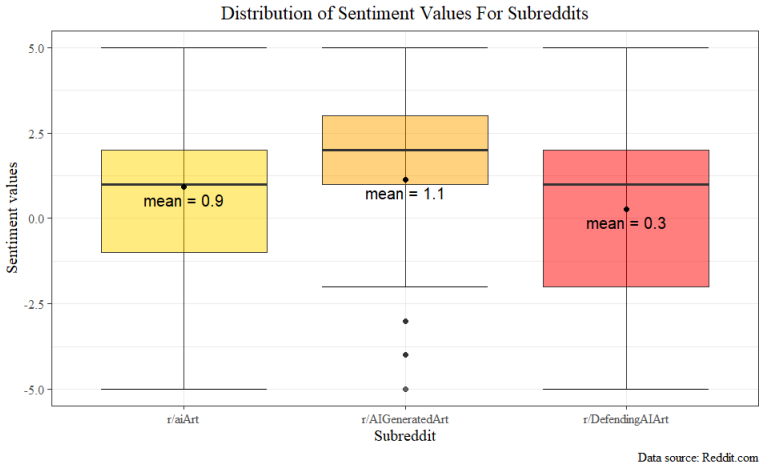

Figure 3. Distribution of Sentiment Values for Subreddits.

3.2. Sentiments of the comments.

3.2.1. *Sentiments for subreddits.* After applying the sentiment lexicons, we ended up with 35015 words which were both in our comments and in available lexicons. Then we calculated the number of words that were defined as "positive" (N = 21765) and "negative" (N = 13250), thus overall our comments have more positive words than negative ones. To obtain the sentiments for the comments, we applied a numeric (ordinal) scale of sentiment for each word of the comment and calculated the mean sentiment. The results for the subreddits are shown in Figure 3. The most positive subreddit in terms of the distribution of sentiment values is "r/AIGeneratedArt", the subreddit "r/aiArt" is more neutral, and the subreddit "r/DefendingAIArt" has mostly negative sentiments regarding comments, since most of them are below the value of 0, and the average value is 0.3.

3.2.2. *Sentiments for topics and subreddits.* The sentiments of the topics presented in Figure 4. Most of the topics have positive sentiment values but two topics are stand out from the general: Topic 1 ("Power & Economic Relations") and Topic 10 ("Debates"). That could be expected since the comments from these topics are mostly criticized or they speak out in

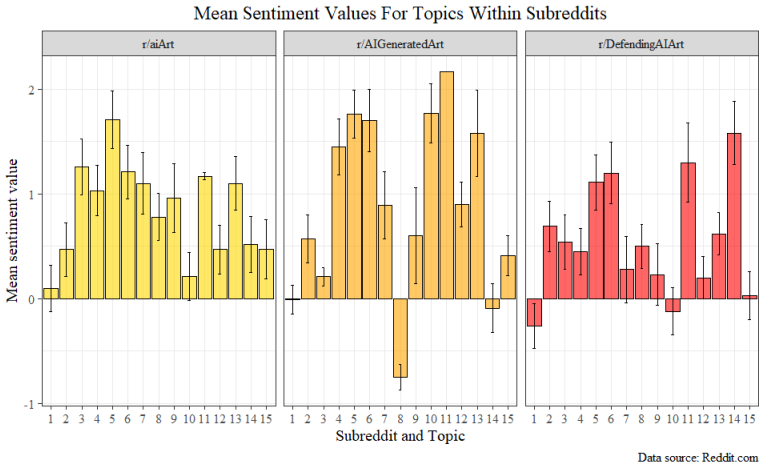

Figure 4. Distribution of Sentiment Values for Subreddits.

a negative way what was illustrated above in the section 3.1 with topic results.

As we can observe, there are some specific situations for subreddits when the sentiment is higher or lower than others. Thus, for "r/aiArt" we see that all average sentiment values are above 0, which means that on average all comments in this subreddit are positive. For "r/AIGeneratedArt" we see an interesting situation with topics 8 ("Copyright Issues"), 10 ("Debates") and 14 ("Image Creation Issues"). Topic 8 received a very low average sentiment value, which means that the comments included in this topic are negative on average, and users are negatively discussed here. As for Topic 10, we see that compared to the average and two other subreddits, it has a very high sentiment value, which is interesting, because the comments here are related to the debate and probably users here are positively discussing issues with each other. In the case of the "r/DefendingArtArt" subreddit, we can observe a general trend in terms of average sentiment values, but they are lower than in the other subreddits, which means that on average comments are more negative than in other subreddits.

3.3. Discussion and conclusions. To sum up, in our research we performed explorative text analysis of comments of Reddit users on topics

regarding AI-generated art. Topic modeling and sentiment analysis were used as the primary methods for analysis, and after analyzing the results, we can say that we can give certain answers to the research questions asked in the introductory section. Therefore, answering how people perceive the ability of AI to create works of art, we could say that users of AI-art subreddits perceive AI-art and the context around it complexly and differently, affecting many problems and areas. Reddit users not only use pre-trained models for generating pictures, but also discuss it, question it, and debate about it and its usage. Here, we would like to move on to the research questions on the topics and moods of the discussions in the subreddit, as they provide precise ideas to answer the initial one.

As has been observed, we have obtained topics that affect both the technical aspects related to the use of various neural network models for generating images, and the questions related simply to the description of pictures and comments, which are mostly positive. In addition, we received quite unexpected and interesting topics in which issues of socio-economic nature are discussed. Since we have chosen three different subreddits for the analysis, we have observed that themes on the first two areas for technical and description issues were mainly discussed in the subreddits which are thematically directed on these purposes ("r/aiArt" and "r/AIGeneratedArt"). For instance, users mainly share their works, evaluate them and discuss different tools and techniques of art creation using AI. What might be worth expecting is that sentiments for these two subreddits are mainly positive and all the meaningful topics where a certain opinion could take place are also found to be positive. Thus, we can say here that the topics of the subreddit and those we received from user discussions turned out to be almost identical, as well as the fact that these subreddits contain mostly positive comments and discussions regarding the use of AI to create art.

For the third group of topics, we found that they are mainly discussed in the "r/DefendingAIArt" subreddit, which is directed at the discussion of issues toward the implementation of AI art and criticizing of anti-AI views on news and events. If the first two subreddits we considered turned out to be mostly just subreddits for artists, or as we saw, "AI-artists" who draw and create pictures using AI technologies, then here we can observe that not only artists are here and interact, but also just "AI-activists". As we have seen, they directly argue and criticize any news, posts or opinions concerning AI and its use both in art and other spheres, as can be seen from the scale of topics that we were able to obtain through analysis. If we look

at a certain order, we see that in the topics that we obtained, the issues studied relate to both economic and social topics, as well as topics related to copyright ownership. Regarding economic issues, the most influential comments contained questions related to how AI technologies can affect business and industry, in particular, how this will affect vacancies, the labor market and the position of designers and artists when there are technologies that can partially or completely imitate their activities. The comments from copyright topics mainly discuss what is the place of art created with AI technologies in the context of market and art products, and how it should be considered here. This gives us an understanding that the people participating in the discussions are concerned about the state of affairs concerning modern AI and its application, and among other things, assess the situation, as shown by sentiment analysis, mostly negatively.

To summarize, if we take communities of artists who evaluate art and pictures created using AI technology, then we find that people here basically discuss the pictures and work themselves outside of any context, while turning to communities where the possibilities of AI are discussed directly in the social context of certain activists, then the topics are discussed here quite a wide spectrum, and relate directly to social and economic issues. Thus, we find that Reddit users are interested in both issues that relate simply to art and pictures themselves, and the consequences of AI and its ability to create art and replace the state of things in the economy and social sphere. We think that these findings from analysis of comments and discussions in the subreddits provide insights for further research on the perception and influence of AI both in technical aspects and socio-cultural issues.

Our findings also support the current research on similar topics. Haque et al. (2022) [16] in their studies found that early adopters of ChatGPT on Twitter are positive towards ChatGPT implications in entertainment, technical development, but negative towards educational and Q&A testing aspects. Qualitative study by SberUniversity & GeekBrains (2023) [25] of experts' opinions on generative AI in education found that specialists see more opportunities of its implementation in education, but with a certain risk to the students' qualifications. Also, computational comparison of human answers and ChatGPT ones by Guo et al. (2023) [14] found that ChatGPT gives more clear, formal and objective answers on questions while human answers are more subjective, emotional and colloquial.

Our study has several limitations. The results cannot be widely generalized since the sample includes only users of AI-art subreddits. Usage of more complex methods for topic modeling, more flexible models for sentiment analysis than sentiment lexicons could give more complex and even precise results in terms of topic exploration. And, as we see it, the upcoming mass usage of ChatGPT for different purposes and in several areas, including for example labor market and education, should be also studied from the perceptional point of view.

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