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User Experience of Natural Language Interaction with a Generative Artificial Intelligence System

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Abstract. Due to the wide use of chatbots nowadays, the investigation of user experience (UX) when interacting with these artificial intelligence (AI) artifacts is essential. Even if there already are some works with similar aims, they do not study UX in the perspective of some specific human features, such as dialogism, pragmatics, and style, which should be considered in the subdomain of AI-oriented to the human factor. The paper introduces the existent UX laws, which are rather directed towards visual, direct manipulation interfaces, with the aim of emphasizing the differences introduced to the UX by the human-chatbot interaction, using natural language. The originality of this paper is the consideration of style and the polyphonic model in analyzing human-chatbot interaction.

Keywords: user experience; generative artificial intelligence; ChatGPT; natural language processing; human-chatbot interaction; human factors, style, polyphonic model

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1. Introduction

Probably the most well-known interaction with an artificial intelligence (AI) application is currently done in natural language using OpenAI's ChatGPT[1] or similar systems. Such conversational interactions with AI have seen tremendous enthusiasm in the past three years, with the launch of advanced interactive AI-based platforms that can generate natural language and/or images in response to user requests or questions, even entering the conversations imitating a human person. These so-called "chatbots" are a

[1] https://openai.com/index/chatgpt/, last accessed on 12.10.2024, see also OpenAI (2013)

subset of the field of generative AI (GAI), which may include not only language but also images, video and/or music. The most notable examples of chatbots are ChatGPT, Google's Gemini[2], Microsoft Copilot[3], Meta's LLaMA[4], Anthropic's Claude[5], and Inflection AI's Pi[6]. Chatbot applications are now present in many fields such as education, medicine, activities that require the development of textual documents, etc. The results are remarkable, thanks both to machine learning (ML), artificial neural networks with a large number of layers ("Deep Neural Networks" - DNN), and thanks to technological progress of manufacturing integrated circuits, which led to the remarkable increase in computer performance as well as the appearance of specialized processors for mathematical calculations needed to train neural networks ("Graphical Processing Unit", "Tensor Processing Unit", and "Neural Processing Unit"). In natural language processing (NLP) the most advanced solutions are transformer-type DNN architectures, for example, BERT (Devlin et al., 2019) and GPTs (Brown et al., 2020). These architectures have enabled the development of large language models (LLM), which underlie the systems listed above. LLMs are trained with huge amounts of data, practically all the available texts in electronic format, in order to generate the most probable word that follows a given sequence of words (Jurafsky & Martin, 2024).

Although ChatGPT-like systems are nowadays mainly discussed, we should not ignore the conversational agents that have been for many years present as assistants of some operating systems or platforms: SIRI at Apple, Cortana at Microsoft, Alexa to Amazon, Google Go. This category is specifically intended to assist users in completing specific requests or tasks, such as searching for a restaurant, accessing a facility or product, etc. Many other, simpler conversational agents are now used in other online interactions for various commercial applications, using the RASA platform[7]. The two used terms, "conversational agents" and "chatbots", although some authors use them interchangeably, have some different characteristics (Jurafsky & Martin, 2024; Zheng et al., 2022), as also stated above. In this paper we will

[2] https://deepmind.google/technologies/gemini/, last accessed on 24.06.2024
[3] https://copilot.microsoft.com/, last accessed on 11.10.2024
[4] https://docs.llamaindex.ai/en/stable/, last accessed on 24.06.2024
[5] https://www.anthropic.com/news/introducing-claude, last accessed on 24.06.2024
[6] https://pi.ai/, last accessed on 12.10.2024
[7] https://rasa.com/, last accessed on 12.10.2024

focus on the case of chatbots, which are the most advanced and raise the most relevant problems for the user experience (UX), precisely because of their generality, being based on LLM.

In addition to natural language, the interaction with an AI application can be of several kinds, the most tangible being the physical one, by commanding some AI-based devices or as an effect of their actions. We can thus list autonomous vehicles, robots, intelligent drones, or other devices controlled by AI applications that require or result in physical contact: intelligent human-computer interfaces, including medical hardware or devices, intelligent gesture-controlled systems, or virtual/augmented reality that includes AI.

There are also implicit, sometimes even not transparent interactions with AI applications, producing other types of effects, sometimes very unpleasant, for example, not granting a loan or firing from a position, as a result of decisions made by AI programs (O'Neill, 2017). The problem is exacerbated by the fact that most machine learning methods, including DNN, cannot explain why they provided those results (Arrieta et al., 2020; Danilevsky et al., 2020; Sandu and Trausan-Matu, 2021; Trausan-Matu, 2022b).

From an aesthetic (which, by the way, is the subject of one UX law (Jablonski, 2024)) or ethical point of view, not enjoyable user experiences can be generated by AI systems also in other forms of communication media than the textual format: music, illustrations, static or moving images. From my experience with such AI-generated “art” I can say that the results are generally pastiche, devoid of the ineffable, which characterizes human art works, lacking aesthetics, the style of a human author. From another point of view, AI is now being used to generate fake, or "deep fake" (when referring to video) news, images, and videos that are offensive, pejorative, false, illegal, with obvious effects (ethical if not always unpleasant) on the experience of those targeted.

I believe that the investigation of the experience of users interacting with chatbots is nowadays essential and it should consider multiple, inter-disciplinary dimensions. Even if there already are some works with similar aims (Zheng et al., 2022), they do not study UX in the perspective of artificial intelligence oriented to some specific human features such as dialogism, pragmatics, style, and aesthetics. As I know, this paper is singular in considering these dimensions. It will also introduce the existent UX laws, which are rather directed towards visual, direct manipulation interfaces, with

the aim of emphasizing the differences introduced to the UX by the human-chatbot interaction, using natural language.

The paper continues with a discussion of some CHI theoretical aspects of UX. The third section is dedicated to an analysis of the specificities of UX in the case of GAI. The last section before references contains conclusions and future directions.

2. The user experience from the perspective of human-computer interaction

User experience (UX) is a term introduced or, at least popularized by Don Norman in his book that had a great impact "The design of everyday things" (Norman, 1988), this author is one of the leading researchers in human-computer interaction (HCI). In fact, the HCI domain is often renamed by the phrase user experience, probably precisely to highlight the emphasis on psychological, and emotional aspects of users in their interaction with a product of information technology. A quote from the book mentioned above highlights this emphasis: “No product is an island. A product is more than the product. It is a cohesive, integrated set of experiences.” (Norman, 1988) Furthermore, another major author in HCI and UX, Alan Cooper stated that people have always been emotional and reacted emotionally to the artifacts (that include human-computer interactions) in their world (Cooper et al., 2014).

Recently, the domain of human-computer interaction has increasingly focused on the experience that users have in operating computer applications, including AI. If earlier the focus was on cognitive psychology, now other orientations are considered, such as gestalt psychology, aesthetics, and principles taken from philosophy or from other domains, such as Occam's razor or Pareto's principle. Heuristically detected laws are also used, such as Miller's law (Jablonski, 2024).

Interest in ensuring an optimal user experience has also led to the specification of UX laws, including by companies such as Uber (2024). The number of these laws varies from 8, in the case of Uber, to 22 in the case of Jablonski (2024), which includes all of Uber’s 8.

Next, we will briefly present most of the UX laws, grouped into four categories, according to Jablonski's (2024) classification. The description of each law is also based on Jablonski's definitions (2024).

2.1. Heuristic laws of UX

This category contains most laws, empirically determined by measurements. Most of these laws are established in the HCI theories before the appearance of the UX perspective, some of them even appearing in the context of work psychology research, for example, for the manual operation of some devices, other than computer interfaces.

Fitts' Law – The time required to reach a target in direct manipulation interfaces (e.g., a button or an icon on the screen) is directly proportional to the distance and inversely proportional to the size of the target.

Hick's Law - The time required to take a decision increases proportionally with the number and complexity of options.

Jakob's Law - Jakob Nielsen pioneered the quote/unquote discount usability engineering movement for quickly and cheaply improving user interfaces by simplifying the learning process for users by providing familiar design patterns.

Miller's Law - the number of items that human short-term memory can use at one time is 7 plus/minus 2.

Parkinson's Law – any task tends to last until the allotted time is completed.

The effect of aesthetics on usability - Misaki Kurosu and Kaori Kashi Mora of Hitachi Design Center tested 26 variations of an ATM interface and identified a correlation between how users perceive usability and its aesthetics.

2.2. Laws based on principles

Occam's Razor - From several explanations, the simplest one must be chosen

Doherty Threshold - Productivity increases when interactions between the user and computer occur at less than 400ms.

Postel's Law - "Be liberal in what you accept and conservative in what you send."

Tesler's Law - The law of conservation of complexity, for any application there is a certain degree of complexity that cannot be reduced.

Pareto's principle - 80% of the effects are due to 20% of the causes.

2.3. Laws/effects of cognitive bias

*von Restorff e*ffect - When several objects are present, the one that differs from the others tends to be recalled.

The Zeigarnik Effect - Interrupted or unfinished tasks are better remembered by people.

The effect of the starting and ending positions of a series are recalled better than the others.

Peak-end rule – an experience is usually judged by its peak and end moments.

2.4. Laws of the psychology of forms (Gestalt)

These laws are specific to the direction of form psychology ("gestalt", in German) introduced in the 1930s-1940s by Max Wertheimer, Wolfgang Kohler, and Kurt Koffka. The basic idea is that we tend to perceive wholes, the visual perception of shapes being determined by several laws/principles:

The law of proximity - spatially adjacent elements are grouped into a single unit.

The law of similarity - similar elements are grouped into a perceptual unit that is differentiated from other units.

Law of simple continuation - two intersecting contours are perceived after a continuation of maximum simplicity.

Law of closure - the hidden contour of a figure is closed after a minimum configuration.

Pangraz's law - visual stimuli are grouped so that the simplest possible form is perceived.

As we specified previously, the Uber company also considered 8 laws of UX, which it uses in the applications intended for users (Uber, 2024):

- The effect of aesthetics
- Doherty threshold
- Fitts' law
- Hick's law
- Miller's law
- Gestalt laws - proximity
- Gestalt laws - perception as a group
- Gestalt laws – similarity

3. User experience in conversational interactions with AI

Considering the user experience in human-chatbot interaction is important to identify shortcomings and thus improve the existing systems through, for example, prompt engineering (Schulhoff et al., 2024). In analysing aspects of UX in interactions with AI, it is useful to distinguish between types of applications: bots, conversational agents, copilots, data analysis applications (knowledge extraction, classifications, etc.) developed using machine learning. In this paper we focus on user experience analysis in conversational interaction with GAI. However, we briefly referred in the introduction to aspects related to the experience given by AI-generated environments (texts, music, images or video sequences).

In the case of the interaction with artificial intelligence applications, specific elements appear in the consideration of user experience, precisely due to the essence of AI technology, which aims to imitate or surpass human performance and specificity. In the case of "classic" human-computer interfaces, based on direct manipulation through windows, menus, buttons, forms, etc., UX is discussed in terms of recommendations, even "laws" to follow (see the previous section) to ensure a pleasant experience, in a hedonistic and cognitive ergonomic spirit.

In the case of inter-communication in natural language, the emotional, pragmatic, rhetorical, and social aspects are much more present. The user expects an AI application that would interact in natural language to converse as much as possible similarly to a human being, including having consciousness. This last aspect is also related to the dialogical perspective of communication and even human existence in general, as highlighted by Mihail Bakhtin (1981, 1984, 1993). The expectations are also in the direction of ethical, responsible, empathic aspects, the ability to give explanations, to enter into conversations including contradictory, creative, polyphonic dialogs (Trausan-Matu, 2013a, 2013b, 2020a) even to generate poetry or stories (Trausan-Matu, 2021c) and to have aesthetic experiences.

Hassenzahl (2018) believes that UX follows a holistic, hedonic-pragmatic model: “Pragmatic quality refers to the usefulness, effectiveness and efficiency of the system. Hedonic quality refers to the pleasurable aspects of interaction – including aspects such as the ability of systems to stimulate, identify and evoke” (Hassenzahl, 2018). In addition to the traditional models in HCI, in UX are also considered “non-utilitarian concepts such as fun, joy, pleasure, hedonic value or play value; products should no longer be seen as

simply offering a bundle of functional features and benefits, but as providing experiences. Customers want products that dazzle their senses, touch their hearts and stimulate their minds." (Hassenzahl, 2018).

3.1. Positive user experiences in interacting with a chatbot

To understand what the basis of the success of ChatGPT and similar systems has been, an analysis of their particularities is necessary. Some have already been known for a long time within the HCI, such as the minimalism already used in Google's interface from the beginning, and which is still used today. Others are specific and I would mention the pleasure of conversation.

Minimalism is one of the important principles in HCI, which is also characteristic of the ChatGPT interface and, additionally, it is also non-obstructive (Blagic, 2022). Its simplicity makes the user focus on the conversation, it is easy to learn and, furthermore, it provides the "wow" effect, it is a call to explore, to adventure, providing an exciting experience (Blagic, 2022).

Megan Ng (2022) compares the experiences offered by searching with Google and ChatGPT, highlighting that in the second case, we are offered a chat-like interface, giving answers to questions, as opposed to the lists of web addresses where they can be searched, returned by Google. In the case of ChatGPT, the need for additional effort to find the answers in the indicated text lists is eliminated, providing a dialogue close to the natural one and the ability to adapt to various types of questions (Ng, 2022). However, this facility has the disadvantage that it is not possible to check the source and validity of the responses, especially since sometimes ChatGPT and other similar systems hallucinate. In fact, Ng also mentions some limitations of ChatGPT: lack of user customization, accuracy, and transparency (Ng, 2022).

3.2. Negative user experiences of a chatbot

The enthusiasm and multiple applications of chatbot-type systems are also doubled by negative experiences, perhaps the most well-known being hallucinations (Borji, 2023), a difficult phenomenon to overcome, recognized as such even by those who developed ChatGPT (OpenAI, 2023), others being limitations in logic, in performing reasoning or even mathematical calculations (Borji, 2023).

A leading AI group of Meta (former Facebook) researchers (Behrooz et al., 2023) performed an HCI analysis of the risk/reward ratio of public access to chatbots still in the research phase. They focused on cognitive perspectives and identified several issues:

1. Lack of conversational context - lack of consideration of the journey of the user. Human conversations take place in contexts, more or less partial, dynamic, and subjective.

2. Human participants in a conversation develop a perception, we could say a personalization of the other participants, which does not happen in the case of interaction with a chatbot, a void of perception of the interlocutor appears (a "Speaker Perception Void").

3. Related to the previous problem it is also the lack of expectation baseline, "the inability of the human user to form reliable assumptions about the communicative and cognitive capabilities specific to a human conversation partner in the case of a chatbot" (Behrooz et al., 2023). People have common expectations about a conversation, even with a stranger. These expectations are frequently violated by chatbots, which leads to cognitive load, a fundamental problem in HCI from the point of view of cognitive ergonomics. Another problem is the "uncanny valley" phenomenon (Skjuve et al., 2019; Behrooz et al., 2023), some research highlights the lack of transparency, the often-abnormal flow of the conversation, the content and lack of understanding of what is being discussed and the ability to respond (Skjuve et al., 2019).

Another significant analysis is that of Kim et al. (2024), who analyzed the dissatisfaction of 107 ChatGPT users. 307 conversations were analysed containing 511 unsatisfactory responses given by ChatGPT and 615 user complaints about those responses. They found that ethics is a major issue (Kim et al., 2024), which can generate very unpleasant experiences through bias, misogynistic, Nazi remarks, etc. Such a phenomenon was encountered with the Tay chatbot, which had to be disabled a few hours after its launch in 2016 by Microsoft (Schwartz, 2024). Ethics is widely discussed and also the subject of regulations at various levels (Trausan-Matu, 2020b, 2021b, 2022a).

3.3. The evaluation of intelligent interactive conversational systems from a user experience perspective

As seen above, intelligent interactive conversational systems can have a positive or negative impact on users. The evaluation of these effects is already

the subject of many works that analyse aspects related to the user experience in the interaction with conversational agents (CA) or chatbots. A very good systematization was made by Zheng et al. (2022). They analysed articles from the ACM Digital Library and retained 135 (78.9%) scientific articles that refer to human-CA interactions (dyadic interactions) and 36 papers (21.1%) that refer to conversational interactions between multiple users using IA (polyadic).

Freire, Wang and Niforatos (2024) compared conversational agents implemented with RASA-type rules to those based on LLM, evaluating several factors: novelty, stimulation, reliability, efficiency, perspicuity, attractiveness, mental effort, frustration, and performance. The results showed the superiority of the latter, as expected.

3.4. Recommendations for designing a conversational interface to ensure a positive experience

As seen from the above, user experience is positively or negatively influenced by multiple factors, cognitive, emotional, pragmatic, aesthetic, ethical, etc. Especially important are the emotions, preferences, perceptions, and reactions of users before, during, or after using an interactive system (Haugeland, 2022).

Liu et al. (2024) analyzed and identified several factors influencing trust in using LLM-based systems, implicitly for chatbots, which are implemented using LLMs. In addition, they also proposed goals to follow to solve the problems that may arise. They highlighted possible problems of chatbots with a direct effect on the experience of users or others.

Users' experience in conversational interaction with AI can also be enriched by texts that inspire, bring novelty, entertain, and support the social dimension (Følstad and Brandtzaeg, 2020; Følstad and Skjuve, 2019).

3.5. A critical analysis of UX from the perspective of artificial intelligence oriented to the human factor

In the case of HCI, as seen in the previous sections, the emphasis considered in UX is hedonistic, towards ensuring user satisfaction, simplifying interaction, and reducing cognitive load, in the idea of cognitive ergonomics. Psychological aspects are thus considered, such as the number of items that human memory can "juggle" at a given time (Miller's law).

In the case of chatbots, however, as they are AI artifacts and, moreover, based on language, the most specific human distinctive feature (Trausan-Matu, 2020c, 2020d, 2021a, 2021c), an extremely important design requirement is to ensure their anthropomorphism, of specifically human characteristics, including social aspects (Araujo, 2018; Diederich et al., 2019; Følstad et al, 2021; Go and Sundar, 2019; Lee and Choi, 2017; Schuetzler et al., 2018). Diederich et al. (2019) highlight the importance of considering sentimental aspects and empathy in conversational interaction with AI. If the field of sentiment analysis already has an important age in AI, with great achievements (Jurafsky and Martin, 2024), the concern of implementing "empathetic" interfaces, which has also been considered for several years, has less success.

Dialogism

As stated above, the most defining human characteristic is language and dialogue, highlighted by Bakhtin as a primordial philosophical category (Bakhtin, 1981, 1984, 1993). It is no coincidence that language and, in particular, conversations have been and are the object of several disciplines: philosophy, semiotics, logic, linguistics, philology, theology, semantics, pragmatics, rhetoric, psycholinguistics and, not least, the school of conversation analysis in sociology. In AI, natural language processing is probably the most complex subfield, with nowadays LLMs achievements and applications having an extreme impact, primarily on user experience.

Regarding ensuring an anthropomorphic character in social interactions (dyadic and polyadic), it is essential to use human ways of conducting conversations (Jurafsky and Martin, 2024). In this sense, it is recommended that conversational agents use some verbal cues[8] and utterances that include apologizing when appropriate, permission request, saying hello and goodbye, making jokes, referencing to the past, personalized responses, thanks, tips and pointers, etc.

Regarding some of the above indications, however, care must be taken not to reach the phenomena of sycophancy or exaggerated apologies (Kim et al., 2024) and redoing of answers, a widespread phenomenon when a user signals wrong answers generated by ChatGPT, for example.

[8] https://chatbotresearch.org/social-cue-taxonomy, last accessed on 24.06.2024

Verbal cues related to style[9] may include abbreviations, lexical diversity, variety of answers, sentence complexity. The issue of style is extremely important in ensuring anthropomorphism, as will be seen in the next section, style being a manifestation of the human spirit, of the uniqueness of each human being (Milică, 2017; Trausan-Matu, 2020c). As a result of the desire of designers and implementers such as ChatGPT, and AI in general, to match or surpass the human, in order to create a conversational experience similar to that of a human being, the generated lines should not only have a style, to respect the rules of conversation but also to be able to bring comfort and joy, this requirement however requiring the AI to include a life experience, with all the dangers and pains that a human endures or is threatened by. The dialogue with a chatbot should be able to be the same as the one with a real, unique person, with whom we feel close to our soul, who really understands our problems, with whom we are in communion, who can receive and give love, of many times, even in the dialogue with a real person we realize that there is no real dialogue, but only a simulacrum.

As a conclusion, in contrast to human texts and utterances, those generated automatically, based on an LLM, do not have intentionality, creativity, true love, understanding, consciousness[10], as it is also stated about the prose generated by AI:

> "The words of an AI have no intentionality. Only conscious minds produce meaning. This is more like infinite monkeys typed out infinite nonsense, and eventually, this creates a Sylvia Plath poem. One might argue it is the consciousness of the observer that gives meaning to art, not consciousness as art's producer, but then the reply is that any meaning here is just pareidolia—it's like seeing faces on the rocks on Mars. It is a deepfake of meaning itself. In this way, AI robs us of our very words by diluting their importance away. These machines give us sentences with perfect syntax but without intentional semantic content—something I've called the 'semantic apocalypse' ".

[9] idem

[10] Some may pretend that ChatGPT can generate words that suggest understanding, love or consciousness, but these can be recognized as false at a simple analysis.

A more subtle aspect of the experience of a user who dialogues expressing compassion to an interlocutor is that this fact generates joy for the one who shows it, not only for the person who receives it (Mihalache and Zagrean, 2021). However, such a beneficial experience is impossible in ChatGPT dialogue, because we cannot have compassion for such artificial, non-human systems.

The problem of style

As seen from the previous section, a fundamental feature of giving a chatbot an anthropomorphic character is also providing a particular style. People, although we can expect common elements in most of them, are generally different in their communication style. It can be said that "style is the living mirror of the human spirit" (Milica, 2017; Trausan-Matu, 2020c). Current approaches to deploying chatbots based on deep neural networks do not learn the style of a specific person but rather a statistical mixture of the styles of the documents used for training. At most, by adapting an already established network ("fine-tuning") through documents of a particular author, one can imitate his style and generate similar texts. A very difficult problem, however, is the generation of language with a particular style, if we refer to Goethe's definition: "An artist forms a style to the extent that he no longer devoutly imitates a model, but develops his own language" (Dittmann, 1988, p.22). In fact, this problem is directly related to the fundamental limitations of artificial creativity (Trăușan-Matu, 2013a, 2013b, 2020c).

Explainability of the results

The problem of explaining the results given by AI systems (XAI - eXplainable Artificial Intelligence) is extremely important, being a hot topic in current research, crucial also in the case of conversational systems, to strengthen users' confidence in the answers received and, consequently, their positive experience (Trausan-Matu, 2022a; Sandu and Trausan-Matu, 2021). The question of explainability is different depending on the questions asked. Arrieta et al. (2020) make a classification according to four types of questions: What?, Why? For what?, and How? Chatbots of the ChatGPT type often give incorrect answers to requests for explanation. Moreover, as Miller (2019) notes, explanations are related to abductive reasoning and are generally contextual. They can be contrastive, responses to counterfactuals: "People do not ask why the event P happened, but rather why the event P

happened instead of an event Q" (Miller, 2019); “You were refused the loan because your annual income is £30,000. If your income had been £45,000, you would have been offered the loan.” (Wachter, Mittelstadt, & Russell, 2018)

4. Conclusions and future directions

As it can be seen from the content of this paper, the UX laws in the HCI are directed especially to the specific aspects of visual interfaces, with direct manipulation. If in the case of intelligent interfaces with direct manipulation or applications that generate images or video, practically all laws are applicable, in the case of intelligent conversational systems only some of them are valid, for example, the laws of Hick, Miller, Tesler, Occam's razor, aesthetics and Gestalt laws.

However, I believe that to ensure the best possible user experience is necessary to anthropomorphize chatbots, the aim that should consider human-specific features of language-base communication, such as rhetoric (Trausan-Matu, 2021a), style, and musicality (Trausan-Matu, 2020e):

• The rhythm that is often present in human texts and speeches (Balint and Trausan-Matu, 2016; Balint et al., 2016) but has not been exploited so far in texts generated by conversational agents.

• Figures of speech and rhetorical devices (Trausan-Matu and Urse, 2024).

• The imaginary (Kao and Jurafsky, 2012).

• The use of illocutionary force and other pragmatic and rhetorical tools (Trausan-Matu, 2020d, 2021a).

• The polyphonic discourse model (Trausan-Matu, 2020a), which characterizes realistic dialogues, in this sense a future direction of research is the development of intelligent polyphonic conversation systems.

Beyond ethical issues, extremely unpleasant experiences can be generated by AI applications that may cause harm by having autonomy, having the ability to make decisions autonomously, to generate their own goals, without human control. Also, other, awfully unpleasant experiences occur when AI is used for population control in a non-democratic state or not regulated by special laws.

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