

Generative AI in User-Generated Content

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ABSTRACT

Generative AI (Gen-AI) is rapidly changing the landscape of User-Generated Content (UGC) on social media. AI tools for generating text, images, and videos, such as Large-Language Models (LLM), image generation AI, AI-powered video material tools, and deep fake technologies, are accelerating creators in obtaining content ideas, drafting outlines, and streamlining creative workflows. The capabilities of Gen-AI could introduce new opportunities to lower the bar and accelerate the pace of content creation for grassroots creators, thereby expanding the volume of AI-generated UGC on social media. However, we lack the necessary understanding of how the wide deployment of such technologies will impact the social media ecosystem. The introduction of Gen-AI can lead to both opportunities and potential challenges among different creator communities, requiring collaboration from both academia and industry. This workshop seeks to bring together experts working on relevant topics of Gen-AI and UGC, to roadmap research on important issues boldly and responsibly.

CCS CONCEPTS

• **Human-centered computing** → **Collaborative and social computing**.

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1 INTRODUCTION

The past few years have seen numerous exciting developments and a variety of applications for Generative AI (Gen-AI). These advancements are powered by foundational models trained on vast datasets, making them adaptable to a wide array of tasks [7, 40]. With minimal instructions, these models can generate text [37, 47],

images [45, 63], and even videos [26, 53]. Some are indistinguishable from content created by humans. Research has shown that Gen-AI can write programming code, jokes, and even college-level essays [47]. Gen-AI systems also possess the capability to make medical diagnoses and explain intricate scientific concepts [17].

These powerful models are accessible to the general public. People can engage with chatbots driven by large language models like ChatGPT or utilize Gen-AI technologies incorporated into commonly used products [44]. For instance, Google recently revealed that its chatbot, Bard, will be integrated into several popular Google applications, including Google Docs and Drive. We can now observe content that is either entirely or partially AI-generated [10, 38]. Social media platforms, especially ones featuring User-Generated Content, have been significantly affected by the trend of generating content with AI. Seeking a deeper understanding of the potential benefits and risks of Gen-AI [7] on UGC platforms requires expertise from HCI and AI practitioners across industry and academia.

Employing Gen-AI technologies to produce, enhance, or process UGC aligns with the evolving culture of social media. Gen-AI could cause a paradigm shift from social media platforms dominated by UGC to an online space increasingly filled with fully AI-generated content or content created with AI's assistance. On the positive side, Gen-AI can craft more human-like chatbots, generate realistic images, streamline scripting and content editing, and produce human-like videos without the need for real actors. However, these advancements come with risks, including the spread of misinformation, potential for biased or misleading responses, threats to privacy through impersonation, and the possibility of inequity for marginalized communities. The inherent nature of UGC, marked by its open access, non-professional production, and rapid online dissemination [41], could be shifted by the capabilities of Gen-AI and bring unique interaction and communication challenges to social media platforms. Given the new changes introduced by Gen-AI for creators, users, communities, and platforms, it is imperative for HCI researchers to explore research opportunities and identify pathways to address potential problems Gen-AI may pose within the UGC ecosystem.

Through this workshop, we aim to delve into the opportunities and challenges Gen-AI presents within the realm of UGC on social media. This workshop explores the current status of this shifting paradigm, and the social, legal, ethical, and practical implications of such usage and what generative AI means for this application domain [1, 15, 16], in order to search for best practices under such context. Building on the synergy of our previous CHI'23 workshops

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[40, 42], we are extending an invitation to HCI and ML practitioners from both academia and industry to discuss the new opportunities and challenges brought by AI-generated content on social media, to explore its impact on communication, creators, consumers, online communities, and social media platforms. The outcome of this workshop will establish a research roadmap and catalyze collaborations in new research initiatives.

2 GENERATIVE AI IN USER-GENERATED CONTENT

User-Generated Content (UGC) is derived from individuals who voluntarily share information or media, making it accessible to other users [33]. Naab et al. established three criteria for UGC: it requires a significant individual contribution; it must be publicly accessible; and it should not emerge from professional contexts or practices [41]. UGC is a crucial medium that empowers users to voice their perspectives and engage with others by disseminating different forms of information [39]. Social media platforms like YouTube, Facebook, Instagram, and TikTok have magnified the reach of UGC, allowing non-professionals to create and share their content, thereby significantly augmenting the breadth of content available on the internet. Moreover, personalized recommendation algorithms have enhanced user experiences by delivering user and context related posts [36]. To protect users, content moderation is essential to eliminate problematic content, such as harassment, violence, and misinformation [19].

Recent Gen-AI technologies, such as ChatGPT, Midjourney, DALL-E, Google Bard, and Synthesia, have been adopted for UGC creation, introducing new dynamics to the social media ecosystem. In the realm of HCI, Gen-AI has found applications in text editing [18, 20], generating synthetic responses for HCI experiments [24], and creating personas [43]. However, the role of Gen-AI in the context of user-generated social media content remains largely under-explored. The use of Gen-AI in UGC can be considered as a form of "AI-mediated communication" [25], a term coined by Hancock et al., wherein computational agents act on behalf of creators by modifying, enhancing, or generating content to achieve communication or interpersonal objectives. Example use cases include marketing campaigns created using LLM [14], generating or editing images or short videos from written instructions [45, 55, 63], and producing videos from brief descriptions [4]. With the rapid proliferation of Gen-AI within creator communities, where many non-professional users are producing AI-generated articles, images, and videos, researchers in HCI, ML, and social media must assess its impact on social media content, creators, consumers, online communities, and UGC platforms [3].

3 CHALLENGES AND OPPORTUNITIES FOR GEN-AI IN USER GENERATED CONTENT

Characterize AI-generated content. The burgeoning field of Gen-AI continues to draw significant attention from both academia and industry. Recent advancements in Gen-AI have achieved automated techniques for crafting text [37, 47], images [8, 45, 63], music [28], code [60], and videos [26, 53]. Social media is known for spreading AI-generated content. For example, a 2016 study unveiled that between 9% and 15% of active Twitter accounts were

identified as chatbots [57]. The development of Gen-AI brought more powerful technology to this application domain. Users use Chat-GPT to create attention-grabbing Twitter headlines¹; Instagram now provides restyling tools that alter image backgrounds or apply artistic filters²; AI virtual YouTubers whose videos are entirely AI-generated start to emerge on the platform³[58]. At the same time, the rise of deepfakes in social media and journalism has escalated concerns regarding their potential to generate misinformation [54, 61]. With the proliferation of AI-generated or AI-augmented content, HCI practitioners must anticipate a surge in such content. This underscores the urgency to characterize the UGC crafted by AI and the AI methods behind its creation. Given the risks associated with the malicious use of AI in generating deceptive content such as misinformation and fake news [64], it becomes imperative to develop and refine user-centered methods for analyzing, auditing, and flagging such content.

How does Gen-AI impact content creators? The open and free access to UGC platforms enables anyone to produce content, thereby significantly amplifying the volume of social media content [9]. The incorporation of Gen-AI holds the potential to further inspire creativity and streamline the content creation process. For instance, AI tools can help users plan, structure and reflect on their writing process [13]. Creators can make AI-generated images through simple text prompts [59, 63]. AI empowers TikTok users to utilize augmented reality effects without the necessity to craft assets from scratch [55]. Text-to-video tools allow creators to generate realistic motions with text input [45]. Deepfake technologies can produce learning videos without the need for scripting and video shooting [6, 11]. Yet the influence of Gen-AI on the creative process, creative output, creative roles, human-AI collaboration in content creation, ethics and responsibility in AI creation, and the evaluation of creative work warrant further exploration [12]. Furthermore, the interaction between Gen-AI usage and the monetary incentive behind content creation [21, 27, 32], as well as the impact of AI-generated content on creators' ability to generate income, is another topic of discussion.

How does AI-generated content influence users on social media? Engagement and trust in user-generated content are essential for users' social media experiences [42, 56]. While Gen-AI facilitates content production, it might produce low-quality or deceptive content that reduces user engagement and hampers trust in the platform [29]. For instance, LLM tools possess disadvantages such as a lack of empathy, potential for bias and inaccuracies, limited context awareness, difficulties in scaling, and the need for human oversight [5]. Previous studies suggest that individuals might lack the skills [30] and willingness to identify AI-generated fake content, despite the evident risks and harm to users [51]. Understanding how people perceive genuine versus AI-augmented content is also a crucial topic [62]. Conversely, recognizing the value of AI-generated content for social media users is imperative. For instance, a resourceful chatbot can function as a virtual companion, intelligent agent, or task-focused assistant [23]. Self-modelling with deepfakes

¹<https://aicontentfy.com/en/blog/how-chatgpt-can-assist-with-creating-more-effective-content-for-twitter>

²<https://www.engadget.com/generative-ai-image-editing-is-coming-to-instagram-18371111.html>

³<https://www.japantimes.co.jp/life/2022/12/29/digital/kizuna-ai-vtubers/>

can enhance the performance of physical exercises in video-based learning [11]. We need a profound understanding of how the increasing prevalence of AI-generated content affects the safety and trust of UGC consumers. Additionally, it is essential to discern the potential value that Gen-AI content can offer users.

How does Gen-AI impact online communities, especially disadvantaged groups? The proliferation of UGC has facilitated the formation of diverse communities on social media around shared interests and identities [22, 48, 50]. Particularly for disadvantaged and underrepresented groups, UGC platforms offer a means to connect with peers, establish social circles, and strengthen their identities [35, 52]. The emergence of AI as a tool for content creation has introduced AI entities as new members within these communities. An AI-powered chatbot can act roles such as antagonist, archivist, authority figure, dependent, clown, social organizer, or storyteller within social media communities [49]. AI has also been employed to interpret image content for visually impaired users [34]. Nonetheless, potential biases, discrimination, and the inaccessibility of AI tools can compromise the fairness of social media platforms. As an example, ChatGPT has been found susceptible to several biases, including those related to gender, race, culture, language, and ideology [46]. The question of whose values are represented by generative AI systems trained on large collections of data needs to be solved to ensure equity and inclusion [31]. As such, understanding how AI might introduce new disparities for disadvantaged social media communities and devising strategies to alleviate these risks are imperative.

How does UGC platforms curate AI-generated content? Over the past decade, recommender systems have profoundly reshaped the landscape of social media platforms by providing personalized content [36]. Major platforms like Facebook, Twitter, YouTube, and TikTok have employed curation algorithms to sort, filter, and enhance user feeds. In addition, to counter problematic content, algorithms for moderation have been put in place to scrutinize, assess, and manage UGC in line with community guidelines and policies [19]. The challenge of how to index and prioritize AI-generated UGC remains unresolved. Such content has the potential to manipulate recommendation algorithms into assigning it higher rankings. As Gen-AI may produce content that can mislead users or propagate misinformation, there is a pressing need to devise novel content moderation strategies to address these emerging challenges.

4 TOPICS AND THEMES

Reflecting on the new opportunities and challenges mentioned above, we aim to gather approximately 15-30 scholars and practitioners in a hybrid format to discuss the application of Gen-AI in content creation and its impact from diverse perspectives. The organizers of this workshop have previously organized the CHI'23 workshops on *credibility, trust, and safety on video-sharing platforms* [42] and on *generative AI and HCI* [40]. This workshop will be a continuation and expansion of the discussion, further delving into the roles of Gen-AI in content creation. We hope to attract audiences from both academia and industry, comprising experts who play various roles – such as policymakers, content creators and consumers, machine learning practitioners, moderators, and

Content	<ul style="list-style-type: none"> • What types of user-generated content can make use of generative AI and how? • How can methods be used to study AI-generated content? How can HCI methods such as user studies, content analysis, auditing, etc., be applied in studying Gen-AI content? • How can generative AI be misused, especially regarding critical issues such as misinformation, plagiarism, online radicalization, and others?
Creator	<ul style="list-style-type: none"> • How will AI-generated content impact content creators? • How does AI-generated content influence creative process? • How does content creators collaborate with Gen-AI? • How will AI-generated content affect the ability of traditional creators to monetize effectively?
Consumer	<ul style="list-style-type: none"> • How does the increasing amount of AI-generated content impact consumers? • What values can AI-generated content bring to social media users? • How does AI influence people's trust in the content credibility?
Community	<ul style="list-style-type: none"> • How can generative AI impact disadvantaged communities? • Does GenAI lead to new inequities for disadvantaged groups? • How can the risks to disadvantaged communities be mitigated?
Platform	<ul style="list-style-type: none"> • How may Gen-AI impact the social media ecosystem when applied to user-generated content? • How should the platform index and curate AI-generated content? • Given the risks that generative AI may present, how does this impact moderation needs?

Table 1: Topics and Themes

others – in the Gen-AI and content creation ecosystem. Specifically, a list of tentative research directions to be addressed in our workshop encompasses content, creators, consumers, communities, and platforms [3] in Table 1.

5 ORGANIZERS

Yiqing Hua is a software engineer at YouTube. Her current work focuses on racial justice, equity and product inclusion on YouTube. She received her PhD from Cornell in 2022. Her PhD research lies in the intersection of social computing and security and privacy. Her work focuses on characterizing threats to online trust and safety, and enabling abuse mitigation in privacy-sensitive environments.

Shuo Niu is an assistant professor of Computer Science at Clark University. He investigates collaborative and community activities on video-sharing platforms like YouTube and TikTok. His research delves into vast video data sets to scrutinize interactions

with user-generated videos, as well as the underlying recommendation and AI algorithms. Specifically, Niu is keen on examining the socio-technical infrastructure of video-sharing platforms and its implications on mental health, misinformation, and technology design.

Jie Cai is an assistant research professor at the College of IST, Penn State University. His primary interests focus on phenomena in novel and interactive online communities in HCI and CSCW, such as gaming, shopping, and content moderation. He is currently working on content moderation in live-streaming communities, focusing on understanding volunteer moderators' practices to support streamers' community growth.

Lydia B. Chilton is an assistant professor in the Computer Science Department at Columbia University. Her research is in computational design - how computation and AI can help people with design, innovation, and creative problem-solving. Applications include: creating media for journalism, developing technology for public libraries, improving risk communication during hurricanes, helping scientists explain their work, and improving mental health in marginalized communities.

Hendrik Heuer is a senior researcher at the Institute for Information Management Bremen (ifib) and the Centre for Media, Communication and Information Research (ZeMKI) at the University of Bremen. His research focuses on Human-Computer Interaction and Machine Learning. Currently, he is working on ways to fight misinformation.

Donghee Yvette Wohn is an associate professor at NJIT and director of the Social Interaction Lab. Her research is in the area of Human Computer Interaction where she studies the characteristics and consequences of social interactions in online environments such as livestreaming, esports, virtual worlds/metaverse, and social media. Funded by the National Science Foundation, Mozilla Foundation, and Yahoo, her main projects examine 1) content moderation, online harassment and the creation/maintenance of online safe spaces, 2) social exchange in digital economies and digital patronage (creator-supporter dynamics), and 3) news consumption via social media.

6 PRE-WORKSHOP PLANS AND PLANS TO PUBLISH PROCEEDINGS

Interested participants need to submit either an abstract or a position paper (recommended length of a position paper is two pages) that describes their past work or research initiatives related to generative AI and content creation. Specifically, we will ask the participants to describe how their (future) research on Gen-AI involves UGC content, creators, consumers, communities, and platforms. The organizers will use this information to facilitate the workshop discussion. We will advertise this workshop on social media (X/Twitter, Facebook, etc.), SIGCHI and CSCW mailing lists, Discord, Slack channels, and our personal and professional networks to recruit participants. We will publish the accepted submissions on ArXiv as workshop proceedings for all authors who agreed to publish. Before the workshop, we will invite accepted participants to a Discord channel to post announcements and coordinate workshop activities. This step also enables asynchronous discussion before and after the workshop. In addition to that, authors of accepted

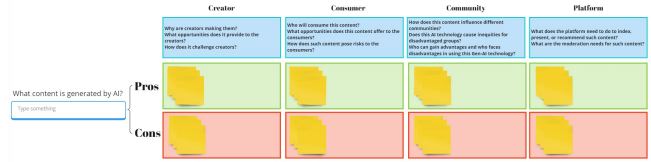


Figure 1: An example Miro board to be used during the workshop discussion.

submissions will be invited to contribute to a podcast episode that we will produce to disseminate the results more widely (participation is voluntary). In all of our efforts, we will prioritize diversity of perspectives and representation to make the workshop diverse, inclusive, and equitable as possible. The organizers will email the participants one week before the workshop to start contributing to the Miro board to facilitate discussion.

7 WORKSHOP STRUCTURE

We plan to structure the workshop into three main phases: pre-workshop preparation, a one-day workshop during the CHI2024 timeframe, and optional follow-up activities. The workshop activities are designed around two primary topics: examining the impact of Gen-AI on UGC and developing guidelines for Gen-AI in content creation.

The main workshop schedule for the in-person participants can be seen in Table 2. We will open with the workshop's motivation, schedule, and introduction to the organizers. During the pre-workshop preparation, the organizers will summarize participants' reflection on how Gen-AI influence the five components in Table 1 to inspire the discussion. We will also give each participant 2 minutes to introduce their research.

We will kick off the morning session with a panel of invited speakers to discuss key opportunities and challenges of Generative AI in user generated content. Following the panel, we will form random groups of 3 or 4 participants and open up the discussion in the audience. The organizers will provide a template Miro board to facilitate the discussion (Figure 1). The first core question will ask participants to identify two or three particular types of AI-generated content (e.g., AI-generated blogs, deepfake videos, etc.) that are worthy of the attention of the HCI community. Participants can either choose the content from the position paper topics or add new ones during the workshop. Then, for each of these content categories, we will ask participants to reflect on the opportunities and challenges such content brings to the creators, consumers, communities, and platforms. This exercise will allow participants to exchange thoughts on the impact of Gen-AI on user-generated content.

During the afternoon session, participants will select a topic from the morning session and formulate a research agenda to develop guidelines for Gen-AI in UGC. We will present various contexts, such as the implications of Gen-AI in content creation and consumption, the emerging need for content moderation, designs for AI-driven content creation, and policies pertinent to both the community and platform. We will organize several breakout rooms under the theme "*Understanding Best Practices*", with each group

Time	Activity
9:00-10:00	Opening and Introductions
10:00-10:20	Coffee Break
10:20-11:30	Panel of Invited Speakers
11:30-12:10	Group Discussion 1 - Impact of Generative AI on User Generated Content
12:10-13:20	Lunch Break
13:20-14:30	Group Discussion 2 - Guidelines for Generative AI in Content Creation
14:30-14:50	Coffee Break
14:50-15:30	Presentation and Reflection
15:30-16:00	Closing Remarks

Table 2: Workshop schedule

having 5-8 participants. The primary objective is to develop guidelines tailored for designers, regulators, users, and consumers of Gen-AI. In the breakout activity, participants will explore their chosen topics in two phases: designing a research agenda for guideline development and brainstorming potential guidelines related to Gen-AI for different stakeholders. First, participants will pick stakeholders, choose HCI research methodologies, and outline crucial factors for exploration. Then, we will use the AI design guidelines proposed by Amershi et al. [2] as a foundational template but adapt it for Gen-AI and UGC. We'll craft activities and Miro boards to encourage participants to brainstorm which guidelines might be vital initially, during interaction, when errors happen, and over time.

For remote participants who attend asynchronously, the organizers may facilitate separate Zoom/alternative similar platform sessions. The planned activities will identify opportunities and challenges of Generative AI in user generated content and give participants an overview of this space. The optional follow-up activities include submission of future HCI workshops, co-authoring publications, and collaborative research projects.

8 WEBSITE

We will present our call for submissions, organizer information, and workshop events, and submissions at <https://genai-in-ugc.github.io>.

9 WORKSHOP MODE

The workshop will be in hybrid mode. The workshop will be hosted in person during CHI '24. The participants will be offered an opportunity to join over Zoom/alternative similar platform and utilize breakout rooms for small group discussions. We will use Miro Board to organize activities so in-person and online participants can both join the event. A hybrid workshop can broaden participation since it will help eliminate the concerns over travel costs and visas. Since AI-generated content on social media poses great challenges and opportunities worldwide, the hybrid format will allow us to broaden global participation and encourage participation from the Global South.

10 ASYNCHRONOUS ENGAGEMENT

We will offer two options for attending the workshop asynchronously. First, all workshop materials, including accepted position papers, Miro board, and Discord discussion, will be available all the time to asynchronous participants. There will be links on the website for all participants to view at any time. Participants will be encouraged to make a bio card on Miro to introduce themselves. Second, we will acknowledge all the participants. For participants who want to give a presentation, we will allow participants to send a pre-recorded video to the organizers, and the organizers will display the videos during the workshop in the opening introduction. As an option, if a few participants cannot attend live on Zoom/alternative similar platform, the organizers will facilitate separate sessions for group discussion.

11 POST-WORKSHOP PLANS

The website will run for a day. All notes and materials from the workshop will be documented, made accessible, and shared on the website. We plan to summarize the knowledge and future work from the workshop with the broader HCI community through blog posts, social media posts, and submissions for future workshops. The website may be reused for future workshops. The Discord channel will continue for discussion and community-building after the workshop.

12 ACCESSIBILITY

We will require the authors to provide an accessible PDF of all the position papers. For online workshop attendees, auto-generated captions will be enabled, and the participants will have the option to turn them on. Participants with special accessibility requirements can contact the organizers. The organizers will work with the Accessibility Chair to solve other accessibility issues.

13 CALL FOR PARTICIPATION

Generative AI (GenAI) is rapidly transforming the landscape of User-Generated Content (UGC) on social media in all aspects. This workshop seeks to convene experts from both industry and academia to deliberate on the social, legal, ethical, and practical implications of employing generative AI in content creation and to discuss best practices when leveraging such technology. The workshop will be conducted in a hybrid mode. The event will be held in-person at CHI '24 and will also be available on Zoom or a similar platform. To participate, you are invited to submit an abstract or a two-page position paper detailing your research background, your interest in Generative AI and content creation, and/or your prospective related work. We are keen to understand how your research intersects with Gen-AI content, creators, consumers, communities, and platforms. With your consent, your submitted abstract will be published on the workshop website and ArXiv. During the workshop, we will brainstorm the impact of generative AI on content creation, as well as the potential opportunities and challenges it might introduce. Subsequently, attendees will collaborate to draft design guidelines for employing Gen-AI on social media. At least one author of each accepted submission must be present at the workshop physically or virtually. All attendees must register for the workshop and for at

least one day of the conference. To learn more about the workshop, please visit <https://genai-in-ugc.github.io>.

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