Forms of Fraudulence in Human-Centered Design: Collective Strategies and Future Agenda for Qualitative HCI Research

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ABSTRACT

New technical forms of deception–including AI deepfakes and unethical uses of ChatGTP–have gained attention in the wider research community and media. There has also been an increase in the coordinated social activities of bad actors posing as legitimate human research participants. People, for example, sign up for online HCI studies by misrepresenting their identities and experiences. This workshop explores what counts as "fraud" in the rapidly changing sociotechnical landscape of qualitative HCI research sites, and how might our community better understand (and strategically handle) new forms of fraudulence in human-centered design. Researchers across academia and industry are invited to participate in this discourse, share their personal experiences, explore potential strategies to combat fraudulence and reflect critically on the efficacies and shortcomings of such strategies. Outcomes of this workshop include working towards better guidelines, forming a community of researchers to support those impacted by fraudulence, and collaboratively defining a research agenda based on workshop discussions.

CCS CONCEPTS

• **Human-centered computing** → **Human computer interaction (HCI)**.

KEYWORDS

fraudulence; deception; qualitative research; online studies; human research participants; ethics; data integrity

1 BACKGROUND

A 2004 case study in Public Health illustrates an incident where the participant of an interview study on HIV-positive youths gave facts that were contradictory to the researcher on what was known about the condition [8]. The researcher then followed up with further probing questions, only to be met with even more inconsistencies. This became an ethical conundrum for the researcher who was unsure of what to do with the data and whether the research was valid. This situation and subsequent turmoil are all too familiar to us, the doctoral student organizers of this proposal, who encountered similar questionable participants in our respective research studies.

Prior work has operationalized untrustworthy behavior from research participants in a few different ways. *"Imposter participants"* was used for individuals who misrepresent their identity and exaggerate their experiences [18]. *"Catfishing"* was used for fake identity representation, most commonly in dating contexts [13, 18]. *"Fraudulent"* was used to denote an intent, either to gain an incentive or cause harm, through ineligible participation [12, 19]. Here, we use the term fraudulent as an umbrella term that covers harmful intent, suspicious behavior, and identity misrepresentation. We also note, however, that the concept of 'fraudulence' can feel especially fraught for HCI researchers. The language of suspicion and harm runs counter to the underlying ethos of human-centered design and our training to deeply respect the participation and expertise of stakeholders and advocate for diverse user perspectives. This workshop aims to engage these underlying tensions for researchers and designers in the HCI qualitative research community, as well as find productive paths forward.

Fraudulence impacts data integrity – in both qualitative and quantitative contexts. The conventional notion is that quantitative research is more susceptible to fraud due to the anonymity it affords (e.g., survey respondents are invisible to researchers when compared to interview participants) [2]. Therefore, fraud in quantitative contexts, like surveys for example, has received more deliberation, with measures like attention checks, reCAPTCHA, IP limiting, and bot detection becoming standard considerations during study design [12, 16]. In contrast, in qualitative settings, once an interview has begun, there is little information or guidelines on what a researcher (who suspects fraudulence) can do to verify the authenticity of the participant [17]. The need for better guidelines and protocols has also become greater with the prevalence of online qualitative studies. Online studies, while a powerful way of making research more accessible to participants [6, 11, 14], have also made it more accessible for fraudulent parties [17, 18]. Online studies also attract a wide range of people whose identities are hard to verify when compared to in-person recruitment which is more intentional and often contained within the researcher's chosen target group. There aren't many straightforward ways in online qualitative studies to check if someone is located where they say they are, or verify their identity while preserving their privacy as it is possible to fake IPs and attend an interview claiming to be local.

In qualitative work, researchers take on the role of "situated interpreters" [3], and many times have to interact directly with participants to co-create knowledge. When this relationship is impacted by fraudulence, it may negatively affect the researcher's composure, safety, and sense of confidence [1, 17]. Scholarship on researcher well-being has focused on researchers dealing with emotionally distressing topics, such as (but not limited to) death, violence, oppression, and abuse [7, 15]. The impact of fraudulence on a researcher's well-being is an area that needs further discussion and research to effectively direct social support and mentoring efforts.

Essentially, the incidence of fraudulence in qualitative research brings up several challenges and questions for the qualitative researcher – how to confirm fraud when relying on one's subjective expertise, how to cope with the stress and decision-making caused by fraudulent behavior, and how to respond when integrity is questioned. For the HCI qualitative research community, this experience also creates additional, broader challenges that call for more standardized knowledge – How might researchers better check for biases as they are forming an opinion or acting on their instincts when faced with fraudulence? What are the impacts of data misrepresentation, particularly to marginalized communities? What are the potential needs and drawbacks for validating the background of HCI participants, similar to some of the clinical studies? What are the best practices for transparency, open science, and reporting in publication when faced with fraudulence?

As we explore such questions, also pertinent to this line of thought, is looking beyond human forms of fraudulence and anticipating technology-facilitated fraudulence. For instance, developments in deepfakes [9] have made it possible for individuals to easily swap faces in real-time through AI-powered filters and modify how they present themselves [10]. Additionally, a recent study investigated the possibility of using ChatGPT to *"scam the scammer"* by engaging with them via AI to waste their time and resources, in an effort to discourage them from fraud [4]. While much is not known about such technology-facilitated fraudulence in qualitative research, there may be possible overlap here, especially as the use of technology is becoming increasingly prevalent – a recent example being the use of AI to conduct semi-structured interviews [5]. In this workshop, we hope to discuss and speculate on such outcomes, and form a better understanding of fraud in online qualitative research.

In summary, how fraudulence is understood, the various ways it can occur, what strategies to employ, and how to anticipate and train for it proactively is a knowledge gap in qualitative HCI research, especially when compared to domains such as health sciences and psychology [8, 12, 17, 18, 20]. Our workshop goals are: (1) advance knowledge to bridge this gap by bringing together HCI researchers across different domains and expertise levels to collaboratively form better strategies and guidelines, (2) define a new research agenda through identified challenges and fruitful discussion, and (3) build a community of support through exchange of case studies and produce an interactive casebook for continued interactions and guidance amongst the qualitative HCI community.

2 ORGANIZERS AND ADVISORY COMMITTEE
2.1 Organizers

All organizers involved in this workshop have experienced fraudulent behavior either directly (when facilitating research) or indirectly (through supervised students or staff). Six of the listed organizers are currently engaged in research studies (in progress) that investigate fraudulence, its impact, and mitigation. Through our expertise and personal experiences, we hope to facilitate meaningful discussions on fraudulence and how HCI researchers could improve methodological practices. Further information on organizers and their backgrounds can be found below:

Aswati Panicker is a PhD student in Informatics at Indiana University Bloomington. Her research investigates how technology-mediated food interactions can support long-distance family relationships through scaffolding, experiential sharing, and support of role changes and transitions. Her work uses human-centered and participatory design approaches. Website: https://aswatipanicker.com/

Novia Nurain has recently completed her doctoral degree in Informatics at Indiana University Bloomington and will be joining as a postdoctoral researcher at the University of Michigan's School of Information. Her research lies at the intersection of Human-Computer Interaction (HCI), Computer-Supported Cooperative Work (CSCW), and Aging, with a focus on supporting technology design of socio-technical systems that promote a holistic understanding of health. Methodologically, she adopts humanistic research approaches in HCI/CSCW (e,g., surveys, interviews, photo diaries, collaborative workshops, and field deployment) to ground her investigations and translate the findings into theoretical frameworks, design toolkits, and implications for designs. Website: https://novia-nurain.github.io/

Zaidat Ibrahim is a PhD student in Informatics at Indiana University Bloomington. Her research focuses on supporting women's

health journeys of faith-based population. She leverages qualitative and quantitative HCI research methods in her work, utilizing the results to formulate design guidelines for initial prototypes of personal informatics systems for women's health. Website: https://ibrahimzaidat.com/

Chun-Han (Ariel) Wang is a PhD student in Computational Media at the University of California, Santa Cruz. Her research interests are in social media and health. She adopts human-centered design research methods in HCI. Website: https://www.ariel-w.com/

Seung Wan Ha is a Ph.D. Student in Computational Media at the University of California, Santa Cruz. His research explores how personal informatics can support individuals' everyday activities and responses during life events. He utilizes qualitative Human-Computer Interaction (HCI) research methods in his work, suggesting design implications and frameworks for designing personal informatics tools. Website: https://www.haseungwan.com

Elizabeth Kaziunas is an Assistant Professor in Informatics at Indiana University Bloomington. As an interpretivist researcher, she draws on ethnographic methods, social theory, and participatory design approaches to examine the social and organizational contexts of health information systems, lived experiences of health datafication, and social impacts of emerging technologies. Website: https://www.elizabethkaziunas.com/

Maria Wolters is a Reader (Associate Professor) at the University of Edinburgh, UK, and leads the Social Computing research group at OFFIS Institute for Information Technology. She uses mixed methods to co-create technologies that improve people's health and wellbeing. At OFFIS, she focuses on inclusive and transparent citizen participation in democratic processes. Website: https://mariawolters.net/

Chia-Fang (Christina) Chung is an Assistant Professor at the University of California, Santa Cruz. Christina's research focuses on designing personal informatics to support healthy lifestyles, relationship building, and community empowerment. She uses a mix of participatory design approaches, system designs, and field evaluations to provide in-depth empirical understandings, rigorous theoretical reflections, and innovative design implications. Website: http://cfchung.com/

2.2   Advisory Committee

In addition to the workshop organizers, we also have an ***advisory committee***, consisting of senior researchers whose advice and input we rely on for workshop activities and broader questions on research practices, mentorship, and ethics in HCI.

Kay Connelly is an Associate Vice President of Research and Innovation at Michigan State University. Her own research is to design, develop, and evaluate mobile and pervasive technologies for health. Much of her work focuses on vulnerable populations on the wrong side of the digital and health divides.

Katie Siek is a Professor of Informatics at Indiana University who investigates how to empower people outside of clinical environments to proactively manage their health. She is an elected member of the Computing Research Association Board and serves on the Council of the Computing Community Consortium.

3   WORKSHOP FORMAT

The workshop is planned to be held in person at CHI'24. All workshop materials will be posted on the workshop website to provide asynchronous access.

4   SUBMISSIONS

We will invite submissions by distributing the call for participation to our research networks, social media channels, and through the CHI 2024 website. Submissions will be open to HCI researchers across academia and industry. All expertise and career levels are welcomed. Interested individuals will be asked to submit their fraudulent experiences in a case study format. Case studies should include the following components: (1) a description of the study context, (2) how fraudulence was observed, (3) how fraudulence was addressed (if applicable), and (4) a discussion or reflection of the impacts of fraudulence. We encourage case-study submissions that:

- Explore varied and emerging forms of human/nonhuman fraudulence and the impacts on HCI qualitative research and/or human-centered design
- Critically reflect on how we define and talk about "fraud" in HCI, including examining the roles of academic/industry research groups and user communities
- Unpack fraud in relation to the diversity of qualitative research practice in HCI, including self-reflexive discussions on how we experience the risks and harms of fraud differently both as researchers and people
- Detail experiences with fraud from a particular methodological/theoretical perspective, including but not limited to: ethnography, feminist HCI, participatory design, surveys, online workshops, etc.
- Reflect on fraud from the researcher's perspective, covering personal accounts of challenges with fraudulence, such as the impact on well-being, the need to overcome bias, the risk of misrepresenting marginalized communities, etc.

Sensitive information is to be anonymized as the researcher sees fit. Suggested formatting guidelines or templates for the case study report will be made available on the workshop website. During submission of the case study, researchers will need to include whether or not they give permission for their fraudulent case study to be included in the collective guide of fraudulent encounters (see section 7 on post-workshop plans), which will be made available on the workshop website. Researchers have the option to keep their names and institutions anonymized for any public-facing workshop outcomes.

5   WEBSITE

A website with full details of the workshop will be made live here: https://fraud-in-hci.github.io/. All accepted workshop submissions will be posted to the website (with the attendee's consent). Upon completion of the workshop, any photos, updates, or generated outcomes will also be posted here.

Table 1: Workshop Activities

Time*	Duration	Activity
9:00 - 9:10 am	10 minutes	**Introductions:** Organizers to introduce themselves as well as communicate workshop goals, agenda, and expectations
9:10 - 9:30 am	20 minutes	**Icebreaker Activity:** Facilitate attendee-attendee introductions and interactions
9:30 - 10:30 am	60 minutes	**Case Study Presentations** Sharing experiences of fraudulent encounters, strategies, and open questions
10:30 - 11:00 am	30 minutes	**BREAK**
11:00 - 12:00 pm	60 minutes	**Ask the Experts Panel (Institutional Ethics Review and Research Support Divisions):** Discussion with IRB office, Research Dean Office, or other institutional research support divisions on current and future plans on research and researcher support
12:00 - 1:30 pm	90 minutes	**LUNCH BREAK**
1:30 - 2:30 pm	60 minutes	**Ecosystem Mapping Activity: Responsibilities, Support, and Strategies** Sharing and brainstorming strategies across the ecosystem of HCI research. Identify the actors (e.g., individuals, mentors, institutions, professional communities), their levels of involvement and responsibilities, and strategies within and across these actors.
2:30 - 3:30 pm	60 minutes	**Thinking Exercise:***"Put yourself in the Fraudulent Participant's shoes"* Discussion in small groups on themes such as fraudulence identification, new technologies that enable fraudulence, participant-researcher interaction strategies, and bias recognition
3:30 - 4:00 pm	30 minutes	**BREAK**
4:00 - 5:00 pm	60 minutes	**Ask the Experts Panel (SIGCHI Committees):** Discussion with members from SIGCHI committees, such as SIGCHI Cares, Research Ethics, Futuring SIGCHI, on current and future plans on mentoring, training, and research transparency
5:00 - 5:10pm	10 minutes	**Follow Up Plans and Closing Remarks**

6 WORKSHOP ACTIVITIES

Table 1 provides an overview of workshop activities. Please note that these are contingent on workshop acceptance and conference schedule. Any changes will be updated on the workshop website.

7 POST-WORKSHOP PLANS AND PUBLICATION OF WORKSHOP PROCEEDINGS

The aim of this one-day-long workshop is to establish a diverse community of researchers in academia and industry who conduct qualitative research and learn from each other's experiences with fraudulence. We hope to achieve the following outcomes from the workshop:

- Based on the rich discussions and questions from the workshop, we will collaboratively define a new research agenda that we hope to publish as a scholarly publication, such as part of a special issue or a book chapter as well as a publicly accessible report, such as an Interaction article or a medium article.
- The case studies shared by the attendees will be collected and organized as a casebook of fraudulent experiences. We intend to make this available on the workshop website to

serve as a collective practical guide of lessons learned and call for future actions to support HCI researchers.
- We are also investigating open-source tools, such as Quarto [1] or Pressbooks [2] that allow interactive questions and comments. These digital publishing platforms can provide free, living, and interactive resources (e.g., case studies and strategies) for the CHI community. Indiana University Library has agreed to host and support the publishing process of these resources.

8 CALL FOR PARTICIPATION

This workshop explores what counts as "fraud" in the rapidly changing sociotechnical landscape of qualitative HCI research sites, and how might our community better understand (and strategically handle) new forms of fraudulence in human-centered design.

We invite interested researchers to submit, in a case-study format, a narrative of their experiences with fraudulence, the challenges, lessons learned, and questions they have moving forward. Formatting guidelines and templates can be found at https://fraud-in-hci.github.io/. Submissions should not exceed 1000 words and can be emailed to fraud.in.hci@gmail.com. Acceptances will be based on the quality of the submission and the diversity of experiences.

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[1]quarto.org
[2]pressbooks.com

At least one author of each accepted submission must attend the workshop and all participants must register for both the workshop and for at least one day of the conference.

We encourage case-study submissions that:

- Explore varied and emerging forms of human/nonhuman fraudulence
- Critically reflect how we define and talk about "fraud" in HCI
- Unpack fraud in relation to the diversity of qualitative research practice in HCI
- Detail experiences with fraud from a particular methodological/theoretical perspective
- Reflect on fraud from the researcher's perspective (eg., researcher well-being)

During the workshop, attendees will engage in thinking exercises, mapping activities, in-depth discussions, and interactive panels to share and discuss questions, concerns, and proposed strategies. The outcomes of the workshop include (1) a collaboratively defined new research agenda, published as scholarly and public-accessible articles, and (2) a live and interactive casebook of fraudulent encounters that serves as collective practical guides for HCI researchers.

ACKNOWLEDGMENTS

REFERENCES

[1] Dilmi Aluwihare-Samaranayake. 2012. Ethics in Qualitative Research: A View of the Participants' and Researchers' World from a Critical Standpoint. *International Journal of Qualitative Methods* 11, 2 (4 2012), 64–81. https://doi.org/10.1177/160940691201100208

[2] April M Ballard, Trey Cardwell, and April M Young. 2019. Fraud Detection Protocol for Web-Based Research Among Men Who Have Sex With Men: Development and Descriptive Evaluation. *JMIR Public Health Surveill* 5, 1 (2019), e12344. https://doi.org/10.2196/12344

[3] Virginia Braun and Victoria Clarke. 2021. *Thematic Analysis: A Practical Guide* (first ed.). https://uwe-repository.worktribe.com/output/9004204

[4] Enrico Cambiaso and Luca Caviglione. 2023. Scamming the Scammers: Using ChatGPT to Reply Mails for Wasting Time and Resources. (2 2023).

[5] Felix Chopra and Ingar Haaland. 2023. Conducting Qualitative Interviews with AI. *SSRN Electronic Journal* (2023). https://doi.org/10.2139/ssrn.4583756

[6] Jill P. Dimond, Casey Fiesler, Betsy DiSalvo, Jon Pelc, and Amy S. Bruckman. 2012. Qualitative data collection technologies. In *Proceedings of the 17th ACM international conference on Supporting group work*. ACM, New York, NY, USA, 277–280. https://doi.org/10.1145/2389176.2389218

[7] Jessica L. Feuston, Arpita Bhattacharya, Nazanin Andalibi, Elizabeth A. Ankrah, Sheena Erete, Mark Handel, Wendy Moncur, Sarah Vieweg, and Jed R. Brubaker. 2022. Researcher Wellbeing and Best Practices in Emotionally Demanding Research. In *CHI Conference on Human Factors in Computing Systems Extended Abstracts*. ACM, New York, NY, USA, 1–6. https://doi.org/10.1145/3491101.3503742

[8] Sarah Flicker. 2004. "Ask Me No Secrets, I'll Tell You No Lies": What Happens When a Respondent's Story Makes No Sense. *The Qualitative Report* 9 (2004), 528–537. https://api.semanticscholar.org/CorpusID:142452366

[9] Dilrukshi Gamage, Piyush Ghasiya, Vamshi Bonagiri, Mark E. Whiting, and Kazutoshi Sasahara. 2022. Are Deepfakes Concerning? Analyzing Conversations of Deepfakes on Reddit and Exploring Societal Implications. In *CHI Conference on Human Factors in Computing Systems*. ACM, New York, NY, USA, 1–19. https://doi.org/10.1145/3491102.3517446

[10] Jeffrey T. Hancock and Jeremy N. Bailenson. 2021. The Social Impact of Deepfakes. *Cyberpsychology, Behavior, and Social Networking* 24, 3 (3 2021), 149–152. https://doi.org/10.1089/cyber.2021.29208.jth

[11] Serena Hillman, Azadeh Forghani, Carolyn Pang, Carman Neustaedter, and Tejinder K. Judge. 2015. Conducting Interviews with Remote Participants. In *Studying and Designing Technology for Domestic Life*. Elsevier, 11–32. https://doi.org/10.1016/B978-0-12-800555-2.00002-2

[12] Abigail Jones, Line Caes, Tessa Rugg, Melanie Noel, Sharon Bateman, and Abbie Jordan. 2021. Challenging issues of integrity and identity of participants in non-synchronous online qualitative methods. *Methods in Psychology* 5 (12 2021), 100072. https://doi.org/10.1016/J.METIP.2021.100072

[13] Carolyn Lauckner, Natalia Truszczynski, Danielle Lambert, Varsha Kottamasu, Saher Meherally, Anne Marie Schipani-McLaughlin, Erica Taylor, and Nathan Hansen. 2019. "Catfishing," cyberbullying, and coercion: An exploration of the risks associated with dating app use among rural sexual minority males. *Journal of Gay & Lesbian Mental Health* 23, 3 (7 2019), 289–306. https://doi.org/10.1080/19359705.2019.1587729

[14] Haley MacLeod, Ben Jelen, Annu Prabhakar, Lora Oehlberg, Katie Siek, and Kay Connelly. 2016. Asynchronous Remote Communities (ARC) for Researching Distributed Populations. In *Proceedings of the 10th EAI International Conference on Pervasive Computing Technologies for Healthcare*. ACM. https://doi.org/10.4108/eai.16-5-2016.2263322

[15] Wendy Moncur. 2013. The emotional wellbeing of researchers. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. ACM, New York, NY, USA, 1883–1890. https://doi.org/10.1145/2470654.2466248

[16] Mandi Pratt-Chapman, Jenna Moses, and Hannah Arem. 2021. Strategies for the Identification and Prevention of Survey Fraud: Data Analysis of a Web-Based Survey. *JMIR Cancer* 7, 3 (7 2021), e30730. https://doi.org/10.2196/30730

[17] Damien Ridge, Laurna Bullock, Hilary Causer, Tamsin Fisher, Samantha Hider, Tom Kingstone, Lauren Gray, Ruth Riley, Nina Smyth, Victoria Silverwood, Johanna Spiers, and Jane Southam. 2023. 'Imposter participants' in online qualitative research, a new and increasing threat to data integrity? *Health Expectations* 26, 3 (6 2023), 941–944. https://doi.org/10.1111/hex.13724

[18] Jacqueline Roehl and Darci Harland. 2022. Imposter Participants: Overcoming Methodological Challenges Related to Balancing Participant Privacy with Data Quality When Using Online Recruitment and Data Collection. *The Qualitative Report* (11 2022). https://doi.org/10.46743/2160-3715/2022.5475

[19] Margaret R. Salinas. 2023. Are Your Participants Real? Dealing with Fraud in Recruiting Older Adults Online. *Western Journal of Nursing Research* 45, 1 (1 2023), 93–99. https://doi.org/10.1177/01939459221098468

[20] Justine S. Sefcik, Zachary Hathaway, and Rose Ann DiMaria-Ghalili. 2023. When snowball sampling leads to an avalanche of fraudulent participants in qualitative research. *International Journal of Older People Nursing* (8 2023). https://doi.org/10.1111/opn.12572