Stop Mimicking Human Empathy: Designing Empathy as a Mediated, Bounded, and Relational Characteristic of an AI Companion for Emergency Departments

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Abstract

Emergency departments (EDs) are high-pressure care environments where empathy is needed but structurally constrained. Patients often wait in pain and uncertainty, while clinical staff must prioritize urgent cases within time and resource constraints. In this position paper, we examine how artificial intelligence (AI) can support empathetic ED care without simulating or replacing human empathy. Drawing on prior research, we propose a patient-facing, *ephemeral AI companion* designed to support low-acuity patients. Rather than expressing emotions, the companion mediates empathy by providing informational support and offering emotionally attuned interactions when staff is unavailable. We frame empathy as a sociomaterial practice by embedding technology in clinical workflows: foregrounding temporality and intentional positioning, we argue, rather than mimicking human empathy, we should design for relational AI that helps to preserve human relationships, and, through this case, engage with the workshop themes of materiality, situatedness, and responsible use of empathy in AI.

Keywords

emergency departments, AI, patients, empathy

1. Introduction

Emergency departments (EDs) are emotionally intense environments where empathy is both critically needed and structurally constrained [1]. Patients often arrive in pain, fear, and uncertainty [2], while clinical staff must operate under time pressure [3], and balance competing priorities between cases needing urgent medical attention and low-acuity patients with more experiential needs [2]. In this environment, empathy is a central component of care that patients actively seek [2, 4, 5], yet one that clinicians often struggle to provide consistently due to systemic and organizational constraints [3, 1].

Recent work in human-computer interaction (HCI) has increasingly explored how artificial intelligence (AI), particularly conversational agents based on large language models (LLMs), can provide "empathetic" interactions [6, 7, 8, 9]. However, in high-pressure healthcare contexts, empathetic AI risks mimicking human care in ways that may obscure responsibility, foster overreliance, or undermine human relationships. This position paper draws on recent design research in EDs [10] to argue for a *mediated, bounded*, and *relational* conception of empathy in AI.

Using the concept of an ephemeral AI companion for low-acuity ED patients, we reflect on how empathy can be materially enacted through AI without mimicking a human-like capacity, and how its implications depend on intentional design decisions regarding temporality, boundaries, and institutional embedding.

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2. Context: An ephemeral AI companion for the ED

Our work builds on a human-centered design process with low-acuity ED patients and clinical staff. We found that while clinical staff initially envisioned AI primarily as a tool for improving efficiency, patients expressed a strong preference for initial human contact and voiced concerns about AI replacing clinical staff. These insights led to the design concept of an *ephemeral AI companion*: a conversational system available only during waiting times, when staff is unavailable, complementing rather than substituting human care.

The envisioned AI companion leverages conversational capabilities of current large language models (LLMs) [6, 7, 8] to address patients' informational, preparatory, and emotional needs when clinical staff is unavailable. By explaining ED processes, supporting patients in recalling relevant medical information by guiding them through structured input of their clinical history, and providing emotionally attuned interaction, the companion aims to reduce uncertainty and feelings of neglect and passivity during waiting times. Importantly, the companion is not designed to replace empathy, but rather to provide a transitional presence that helps patients feel heard and cared for until human contact resumes.

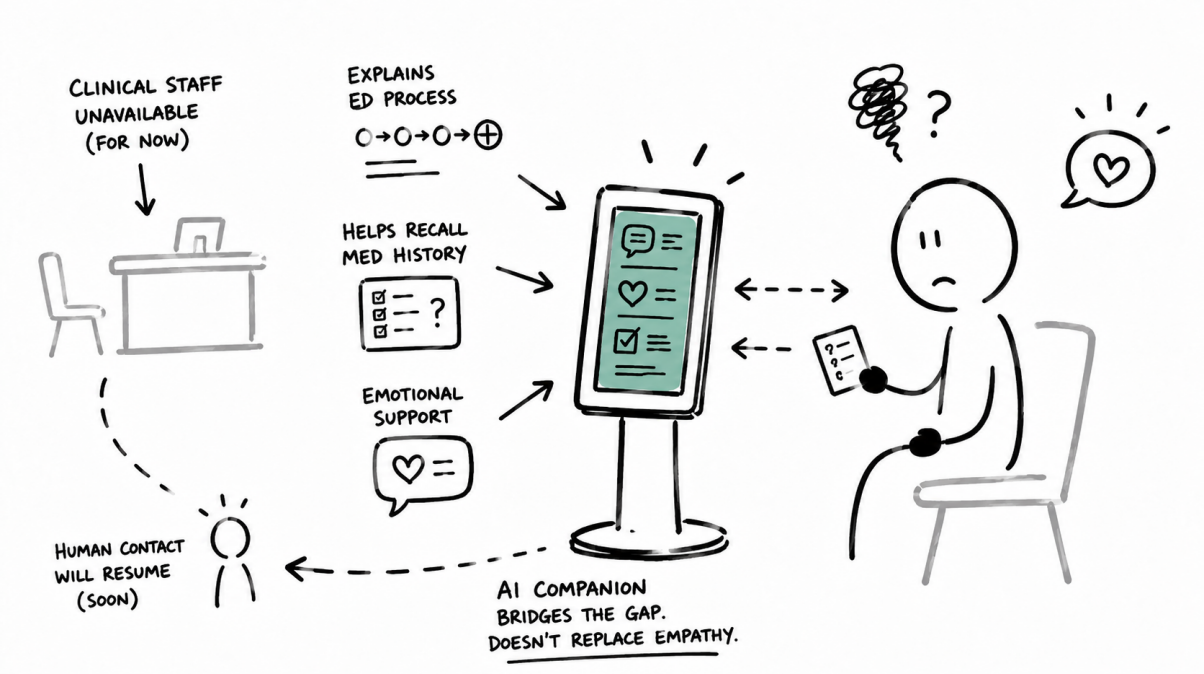

Figure 1: The case of our proposed AI companion for the emergency department: Addressing low-acuity patients' informational, preparatory, and emotional needs by explaining ED processes, helping patients remember relevant medical information, and providing emotionally attuned interaction.

2.1. Empathy as mediation, not simulation

Our findings revealed ambivalence toward "empathetic AI". While some patients valued emotionally attuned responses, many doubted whether AI could genuinely feel or express empathy. These findings echo broader debates in HCI questioning whether empathy can be meaningfully replicated by technology (e.g., [11, 12, 13, 14]).

Rather than designing AI to *mimic* empathy, our work proposes that AI can indirectly support empathetic experiences by alleviating staff workload and offering personalized, calming information that helps patients feel acknowledged. In this view, empathy emerges not from the agent's emotional display, but from the companion's situatedness within social practice and clinical workflows.

Consequently, the role of the underlying LLM also changes. Rather than asking whether LLMs can "have" empathy, we examine how they are configured within a broader care system. This perspective

shifts the role of LLMs from technologies of empathetic simulation to technologies of *empathetic mediation*. The AI companion does not "feel" with the patient [15]; instead, it is positioned as a temporary extension of human care that structures communication and preserves the possibility of human empathy when clinical staff becomes available.

2.2. Boundaries, intentionality, and risk

A key design insight from our work concerns clear boundaries between AI systems and human-human relationships. Participants favored AI support only when staff were unavailable and emphasized the importance of understanding the companion's role, capabilities, and limitations. This speaks directly to the EmpathiCH workshop's concern about intentionality and misuse (Theme 3).

In the ED, patients' need for empathy is inseparable from their experienced vulnerability [4, 2]. An AI that presents itself as available long-term, potentially enforcing addictive engagement, risks fostering over-attachment [16]. Instead, we frame the companion as *ephemeral*, enabling brief, situational interactions that offer reassurance without fostering emotional dependency, but instead creating "precious experiences" [17] through transient interactions.

This highlights how empathy's ethical quality depends not only on conversational tone but also on how it is embedded in ED workflows: handed over by staff, used only when clinicians are unavailable, and positioned as a temporary extension of human care. Properly situated, the companion complements rather than replaces human empathy, helping maintain a sense of attentiveness during uncertain waiting times.

3. Conclusion: Designing for less empathy in AI

From a sociomaterial perspective, the empathetic effects of the AI companion are not located solely in the LLM, its interface, or language. Instead, they emerge through the alignment of technology, clinical workflows, and patients' expectations of care.

In this sense, empathy is neither fully human nor fully artificial, but enacted across a network of human actors and technology artifacts. The AI companion acts as a temporary proxy for attentiveness, redistributing empathy without claiming emotional authority when clinical staff must prioritize more urgent cases. When embedded carefully, it can reduce friction in ED care encounters and help preserve empathy where it matters most: in human-human interaction.

We conclude with a provocation for empathy-centric design in HCI: in sensitive contexts like the ED, not designing for empathy in AI may lead to more ethical outcomes [18]. By resisting emotional simulation and foregrounding mediation and situated use, AI systems can support human empathy without replicating it.

We offer this case to the workshop as an example of how empathy in AI is enacted as a sociomaterial practice, shaped by design decisions and its embedding in clinical workflows. We invite participants to rethink when, where, and how intelligent systems should support empathetic care, without simulating emotional capacities or undermining human relationships.

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Declaration on Generative AI

The authors have not employed any Generative AI tools.

References

[1] A. Taylor, M. Murakami, S. Kim, R. Chu, L. D. Riek, Hospitals of the Future: Designing Interactive Robotic Systems for Resilient Emergency Departments, Proc. ACM Hum.-Comput. Interact. 6 (2022) 442:1–442:40. doi:10.1145/3555543.

[2] M. Eriksson-Liebon, S. Roos, I. Hellström, Patients' expectations and experiences of being involved in their own care in the emergency department: A qualitative interview study, Journal of Clinical Nursing 30 (2021) 1942–1952. doi:10.1111/jocn.15746.

[3] G. Chenais, E. Lagarde, C. Gil-Jardiné, Artificial Intelligence in Emergency Medicine: Viewpoint of Current Applications and Foreseeable Opportunities and Challenges, Journal of Medical Internet Research 25 (2023) e40031. doi:10.2196/40031.

[4] S. Calder-Sprackman, E. S. H. Kwok, R. Bradley, J. Landreville, J. J. Perry, L. A. Calder, Availability of Emergency Department Wait Times Information: A Patient-Centered Needs Assessment, Emergency Medicine International 2021 (2021) 1–6. doi:10.1155/2021/8883933.

[5] C. Østervang, A. T. Lassen, C. M. Jensen, E. Coyne, K. B. Dieperink, What are the needs and preferences of patients and family members discharged from the emergency department within 24 hours? A qualitative study towards a family-centred approach, BMJ Open 11 (2021) e050694. doi:10.1136/bmjopen-2021-050694.

[6] J. Ha, H. Jeon, D. Han, J. Seo, C. Oh, CloChat: Understanding How People Customize, Interact, and Experience Personas in Large Language Models, in: Proceedings of the CHI Conference on Human Factors in Computing Systems, ACM, Honolulu HI USA, 2024, pp. 1–24. doi:10.1145/3613904.3642472.

[7] I. Song, S. Park, S. R. Pendse, J. L. Schleider, M. De Choudhury, Y.-H. Kim, ExploreSelf: Fostering User-driven Exploration and Reflection on Personal Challenges with Adaptive Guidance by Large Language Models, in: Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems, CHI '25, Association for Computing Machinery, New York, NY, USA, 2025, pp. 1–22. doi:10.1145/3706598.3713883.

[8] A. Mahmood, S. Cao, M. Stiber, V. N. Antony, C.-M. Huang, Voice Assistants for Health Self-Management: Designing for and with Older Adults, in: Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems, ACM, Yokohama Japan, 2025, pp. 1–22. doi:10.1145/3706598.3713839.

[9] X. Wang, J. Griffith, D. A. Adler, J. Castillo, T. Choudhury, F. Wang, Exploring Personalized Health Support through Data-Driven, Theory-Guided LLMs: A Case Study in Sleep Health, in: Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems, CHI '25, Association for Computing Machinery, New York, NY, USA, 2025, pp. 1–15. doi:10.1145/3706598.3713852.

[10] J. Klein, P. Sörries, Y. Mutlugil, C. George, M. Altendorf, M. Möckel, C. Müller-Birn, With, not For: Co-Designing a Patient-Facing AI Companion Concept for the Emergency Department Waiting Area, in: Proceedings of the CHI Conference on Human Factors in Computing Systems, ACM, Barcelona, Spain, 2026, pp. 1–27. doi:10.1145/3772318.3790638.

[11] C. Montemayor, J. Halpern, A. Fairweather, In principle obstacles for empathic AI: Why we can't replace human empathy in healthcare, AI & SOCIETY 37 (2022) 1353–1359. doi:10.1007/s00146-021-01230-z.

[12] A. Kerasidou, Artificial intelligence and the ongoing need for empathy, compassion and trust in healthcare, Bulletin of the World Health Organization 98 (2020) 245–250. doi:10.2471/BLT.19.237198.

[13] M. Schmidmaier, J. Rupp, D. Cvetanova, S. Mayer, Perceived Empathy of Technology Scale (PETS): Measuring Empathy of Systems Toward the User, in: Proceedings of the CHI Conference on Human Factors in Computing Systems, ACM, Honolulu HI USA, 2024, pp. 1–18. doi:10.1145/3613904.3642035.

[14] U. Genç, H. Verma, Situating Empathy in HCI/CSCW: A Scoping Review, Proc. ACM Hum.-Comput. Interact. 8 (2024) 513:1–513:37. doi:10.1145/3687052.

[15] L. Seitz, Artificial empathy in healthcare chatbots: Does it feel authentic?, Computers in Human

Behavior: Artificial Humans 2 (2024) 100067. doi:10.1016/j.chbah.2024.100067.

[16] B. Hu, Y. Mao, K. J. Kim, How social anxiety leads to problematic use of conversational AI: The roles of loneliness, rumination, and mind perception, Computers in Human Behavior 145 (2023) 107760. doi:10.1016/j.chb.2023.107760.

[17] T. Döring, A. Sylvester, A. Schmidt, A design space for ephemeral user interfaces, in: Proceedings of the 7th International Conference on Tangible, Embedded and Embodied Interaction, TEI '13, Association for Computing Machinery, New York, NY, USA, 2013, pp. 75–82. doi:10.1145/2460625.2460637.

[18] E. P. Baumer, M. S. Silberman, When the implication is not to design (technology), in: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM, Vancouver BC Canada, 2011, pp. 2271–2274. doi:10.1145/1978942.1979275.