

# Queer Perspectives on Robots for Communities

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## Abstract

As companion robots are increasingly deployed into social settings, consideration on inclusiveness and social acceptability must be addressed. Historically, Human-Robot Interaction research focused on the relationship between an individual user and a robot, while overlooking the systems the relationship operates in. This focus often embeds biases into robotic systems and alienates marginalized groups. Through a community-led queer (LGBTQIA+) participatory design research, this paper proposes how robot companions can be built to serve communities, rather than individuals. We identify four core pillars for designing robots that serve communities: (1) facilitating connection over replacement, (2) mitigating intersectional safety risks in shared environments, (3) addressing the difficulty of radical re-imagination when co-designing, and (4) building trust through explainability and community governance. We argue that by shifting from the individual to the communal, the HRI field can develop more inclusive and trustworthy robotic systems.

## 1 Introduction

Robot companions are becoming increasingly deployed in community settings, such as education, homes, and healthcare [1–3, 7, 23]. This marks a departure from individual-oriented applications commonly associated with social-assisted robots, drawing new questions on how these systems can be built to serve communities as a whole rather than on an individual basis [6]. Prevalent approaches to companion robots are built around cis-heteronormative assumptions about users, identities, and relationships without properly addressing inclusion, trust, and acceptability [9, 22, 24]. This paper examines queer (LGBTQIA+) perspectives, translating empirical insights from an anonymous survey and 2 sessions of 4 participatory design workshops into actionable steps to build queer-affirming and community-centered robotics.

Previous work on companion robots focuses on the individual-robot relationship, instead of the community-robot relationship. [21] Researchers have deployed companion robots with anthropomorphic or zoomorphic forms in studies across wellbeing, education, and healthcare sectors to understand how these technologies interact with individuals [3, 8, 16]. Such forms are meant to replicate the human-human or human-animal relationship, [14], leaving the communal relationships with a robot largely unexplored.

Research centering queer communities in robotics remains limited, despite evidence that queer perspectives reveal critical design risks [15]. In recent work, even when robotic systems properly performed their function, queer participants reported a significant erosion of trust and perceived acceptability if design priorities such

as identity respect, privacy, safety, or user control were compromised. [4, 10–13, 19]. This reflects a broader pattern documented in HRI, HCI, and AI scholarship, where systemic marginalization occurs through the erasure/binarization of sex, gender, and sexuality in data, methods, and deployment, further alienating queer users. [5, 15, 17, 18, 20]. It is critical to note that these concerns are not exclusive to queer users. They are shared by other marginalized communities and spaces affected by misrecognition, surveillance, discrimination and loss of agency.

This paper builds directly on our prior empirical work [9], which examined how queer participants evaluate robot companions and articulated justice-oriented requirements grounded in lived experience. Here, we translate the implications of that study into the context of a robot designed for queer communities. By reframing queer HRI insights in terms of task value, acceptance, and design principles, we turn queer user needs into practice to develop queer community-driven robots that are responsive to intersectionality, needs, and lived experiences.

## 2 The Needs of Queer Users

To explore how participatory design (PD) can inform the creation of queer-affirming and trustworthy robot companions, we utilized a concurrent mixed-methods approach [9]. We collected survey data on desired attributes and perceived risks, alongside qualitative insights from two rounds of PD workshops focused on understanding user needs and supportive design pathways.

Data from the survey revealed patterns that complemented insights from the PD workshops. Our findings suggest that to serve a queer community, a robot must function as a transparent, supportive tool and prioritize user agency over simulated empathy [9]. Participants consistently emphasized that the robot must be "friendly but not a friend." Instead of a long-term solution for companionship, queer users envision it as an assistant or as entertainment, noting that robot companions cannot replicate real queer connections. Furthermore, interactive design of the robot, such as facial expressions and simulated affection, raised concerns of misinterpretation or manipulation rather than increasing user retention or engagement. Rather than the robot's ability to perform socially, user agency was preferred.

Additionally, the robot's design must center the marginalized user instead of adhering to assumptions and normative defaults. Participants across both methods express user mismatch between queer lived experiences and intersectionality, and the cisheteronormative assumptions that are built within AI/robot systems. [9]. For queer individuals, that means the systems must take into account user-defined metrics set by the person related to gender, sexual orientation, race, and other demographics instead of relying on

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assumptions. Moreover, training data should be expanded to include diverse representation from non-Western contexts, and queer communities must be involved in its design process and given the power to veto.

Participants across methods also cautioned against the potential for robot companions to function as tools of surveillance. Queer users emphasized the necessity of user control over data collection, including the ability to opt out via clear privacy settings and to receive full transparency about what data is gathered. To prevent the weaponization of personal data, a salient fear for many queer individuals, their data sovereignty must be protected through physical and local-first architectures that allow data to be permanently erased as needed.

### 3 Designing for the Queer Community

Our findings offer a critical perspective on the deployment of communal robots, shifting the focus from individual utility to collective agency. By mapping participant feedback to the workshops and survey's guiding research questions, we identify four key ideas for future investigation.

#### 3.1 Facilitating Connection over Replacement

A primary tension identified in our study was the "uncanny" valley of robotic social substitution. Participants expressed significant discomfort with "attempts to substitute human-to-human socialization with robotic or ML agentic products." This resistance stems from a concern of community resilience. One workshop participant explicitly stated, "I also worry that it will prevent people from trying to find that queer community, that it can't, like, really replace."

The community envisioned the robot as a resource bridge. This model of "communal robots" emphasizes a system that recognizes its own social limitations and proactively connects users to "real people and communities where I can begin building connections and a support system, especially for matters that it knows it's not equipped to handle." This functionalist preference was reflected in design choices, where participants consistently opted for non-humanoid forms. By rejecting anthropomorphism, the community reinforces the robot's role as a tool for co-creating community rather than a substitute for it.

#### 3.2 Addressing privacy and surveillance concerns

Besides the potential replacement of community, participants were concerned about privacy and surveillance of their communities. However, not all participants agreed about what the remedies for these concerns could be. Throughout the workshops, it became increasingly clear that there is no "one size fits all" for robots, and thus, a tension between privacy and customization emerged. A communal robot for the queer community is unique in that not everyone is out or open about their queer identity, so using a robot explicitly labeled for the queer community raises the risk of outing users in hostile environments. As one participant articulated, a robot at a Pride parade with the "capability to record things" creates a data privacy issue where "things people say walking around in public could be transcribed," putting the safety of those not "out" at risk.

To address these challenges, we propose that communal robots must address needs that are not unique to the queer community in order to mitigate the risk of singling out users while remaining useful. When reflecting on what it meant for a robot to be "queer" or to serve the queer community during our workshops, we encouraged participants to reflect on their intersectional identities. For example, a participant who is also a parent viewed the robot through the lens of their needs as a parent, but also the needs of their child. Furthermore, to protect users, communal robots should address broad community needs alongside specialized ones, allowing the "queer-specific" functionality to remain discreet when used in public or surveillance-heavy spaces.

#### 3.3 Imagination and co-creation

During our workshops, we observed a distinct struggle for imagination. Specifically, activities that dealt with existing problems had fairly lengthy responses, and participants were quick to discuss their points. Meanwhile, activities that dealt with imagining alternatives had fewer responses and participants struggled to discuss. A participant expressed that "in my ideal world, corporations wouldn't exist. So, it would be hard to imagine... it would be different enough... from our current world that it would be hard to... get into the details like this." This struggle underscores the necessity of long-term co-design. Workshop participants advocated for a governance model where community members are "educated on the topic", given an "appropriate rundown of... how can it potentially affect you and your community?", and are empowered to "vote... on a proposal." This suggests that the value of community-oriented robotics can lie in the democratic process of defining what the technology could be, rather than accepting what is currently available.

#### 3.4 Building and sustaining trust in community robots

Our findings suggest that negative perceptions of technology stem from "very unclear communication regarding privacy policies and very difficult opt-outs." To build robots that are trusted by communities, the current model of "Terms of Service" does not work. As participants suggested, being "up front with what it does and how it works" is important for engagement. A robot that is transparent about its data collection and offers clear opt-outs allows for engagement from a community on their own terms. Without this transparency, marginalized communities are more likely to adopt technologies in their communities.

## 4 Robots for Communities

### 4.1 Collective needs and goals

Communal robots should not seek to replace the community it serves or replicate an individual part of a community. Rather, it should serve as infrastructure for the community. If a robot makes it that a user never has to speak to another member of their community, it has failed the community. The goal of collective robots should be to reduce the friction of resource sharing.

## 4.2 Shared community robots

When robots are shared, they become public or semi-public actors, which affects the types of interactions users are comfortable with. Just as queer users fear being outed, other communities may fear being profiled. Therefore, shared robots must have thoughtful privacy settings that do not require a user to be technologically proficient to understand.

## 4.3 Evaluation, governance, and sustainability

For community robots, ownership is important for trust. Sustainability depends on the community feeling like they have the power to choose features they feel informed about and genuinely serve the needs of their community. Researchers must also provide more speculative activities to help communities learn how to demand tech that serves them, rather than the other way around.

## 4.4 Computational and design challenges

Communal robots must be transparent about what a robot is doing. Therefore, accessible explainability is crucial for trust. A robot that serves community must also handle multiple roles. A communal robot might be a tool for a parent in one moment and a medical aid for an elderly person in the afternoon. Creating a robot that can adapt to shifting roles without over-surveilling its users or leaking data between users is a major technical hurdle.

## 5 Conclusion

This work marks a necessary departure from the individualistic paradigm that has historically dominated HRI research. By centering queer lived experiences, we demonstrate that for robots to be successfully integrated into communities, they must function as infrastructure that supports community resilience. Our findings highlight a tension between personalized assistance and the risk of surveilling users or putting vulnerable users in danger in shared spaces. Furthermore, the difficulty with radical re-imagining of robots we observed in our participatory workshops highlights that the process of community-oriented robotics is just as important as the product. Trust is a relationship sustained through democratic governance and accessible explainability. We must prioritize intersectional design frameworks that also protect the most marginalized members of a community. Ultimately, by designing robots for communal use, we can design robots that actively empower the communities they serve.

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