Interfacing between the smart home and the street

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Research project
While the home can be a place of privacy and self-expression, it is also our door onto the rest of the world: where we greet guests, chat with neighbours and receive mail. Despite the rich opportunities that this space provides, there have been few attempts to explore it through technology design, with most outward facing smart home products taking the form of surveillance devices. StreetTalk (Wouters et al., 2014), one of the few examples of research in this area, explored how households can express themselves to passersby, while Balestrini et al.'s (2017) household moisture sensors formed part of a city-wide campaign. These projects demonstrate a range of possibilities for technology where the home meets the street, from creative expression to political action.

At the same time, homes are becoming more connected to the outside world through internet-connected devices, raising various issues. Pierce (2019) explored the "leaky camera sensor fields" of smart doorbells, which surveil large swathes of public space and passers-by. Recently, Amazon's Sidewalk feature granted their products the ability to form connections with neighbour's devices, subtly changing the nature of internet connectivity from a private utility to a shared resource. This fuzzy edge presents challenges for privacy and legibility, but also new ways of thinking about the home.

This area could be explored through a variety of different approaches, including:

- Ethnographic approaches to understand current practices and attitudes and how smart home developments have affected these.
- Prototyping novel interfaces to explore and evaluate alternative approaches possible with current and emerging technologies.
- Design-led or speculative approaches that explore alternative technology futures that might emerge as smart home technologies continue to develop.

Applicant skills/background
This project might be suitable for candidates from a variety of backgrounds including computer science, design, urban planning and architecture.

References
Balestrini, M., et al. 2017. A City in Common: A Framework to Orchestrate Large-scale Citizen Engagement around Urban Issues. In Proceedings of CHI 2017.

Pierce, J. 2019. Smart Home Security Cameras and Shifting Lines of Creepiness: A Design-Led Inquiry. In Proceedings of CHI 2019.

Wouters, N., et al. 2014. StreetTalk: participative design of situated public displays for urban neighborhood interaction. In Proceedings of NordiCHI 2014.