

Project HopE: Investigation of the Honeytrap Effect on (Semi-)public Ambient Displays in Long-term Field Studies

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Background



- Field deployment research on ambient displays (see Figure 4) nowadays focuses on understanding how these devices are really being used in the wild over longer periods of time.
- While there is a notable number of effects linked to the utilization of ambient displays, the **Honeytrap Effect** (see Figure 1), in particular, is highly suitable to reflect on the underlying user behavior manifesting throughout interaction.
- In essence, the Honeytrap Effect helps to explain the attraction to a system arising from others already engaging with it.

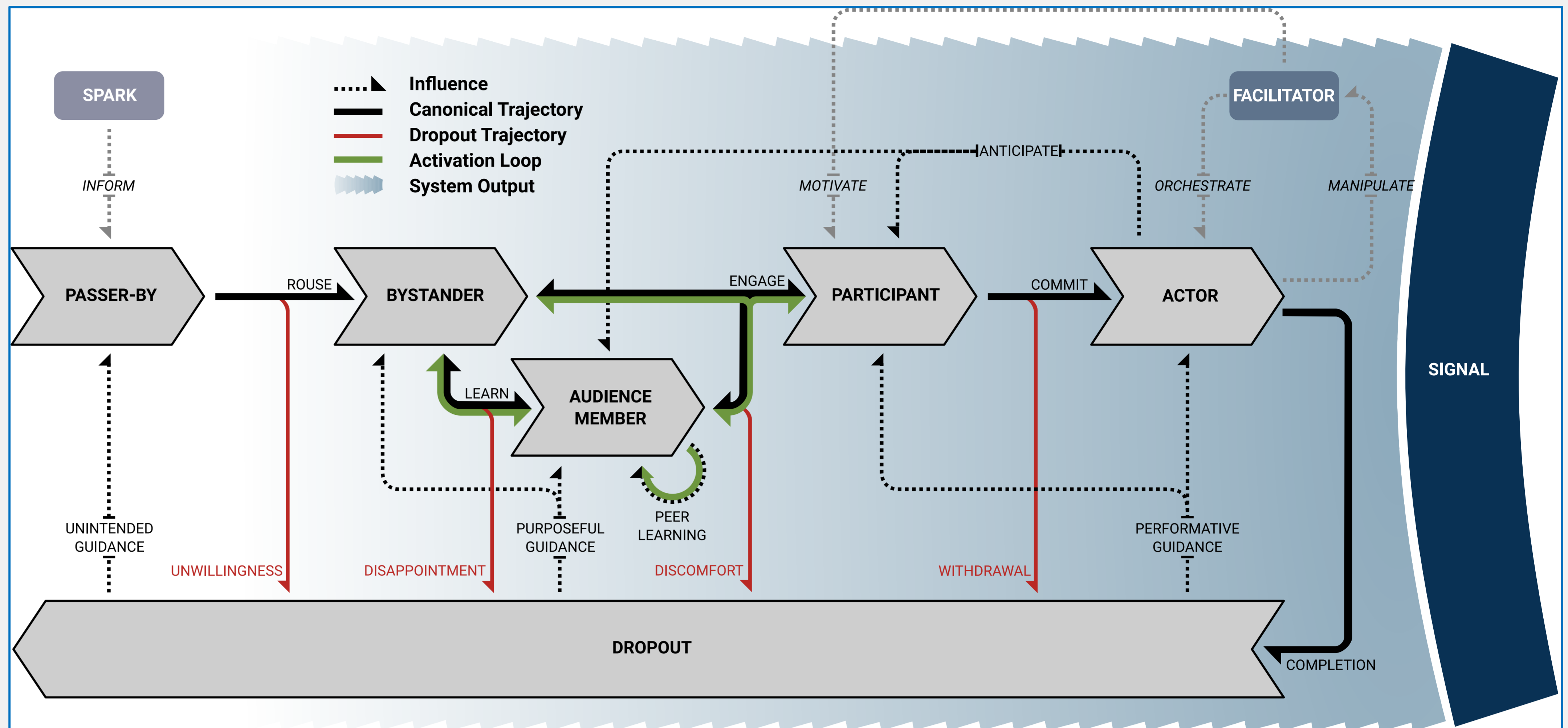


Figure 1. The Honeytrap Model proposed by Wouters et al. including user roles, trajectories, influences and triggers that affect how people engage with interactive systems. Read more: <https://doi.org/10.1145/2901790.2901796>.

Aim



- The project aims to develop a **methodological framework** that enables an automatic evaluation of ambient displays around the clock. This framework ...
 - ... strives towards scrutinizing **authentic usage in the wild** through the lens of the honeytrap effect.
 - ... will make use of both **qualitative and quantitative methods** to draw a holistic picture of user behavior.
- A set of **design recommendations** for ambient displays in semi-public and public contexts is to be developed. With these recommendations, we hope contributing insights regarding, for example, content presentations, user engagement, and the planning of display installations.

Deployment Sites



- Overall, **two general locations** were chosen for the context of this project (see Figure 4):
 - A first installation of one ambient display in a real-world agile software development environment (a second one will follow). The company is located near Hamburg.
 - The deployment of four installations across the university's campus in Munich.

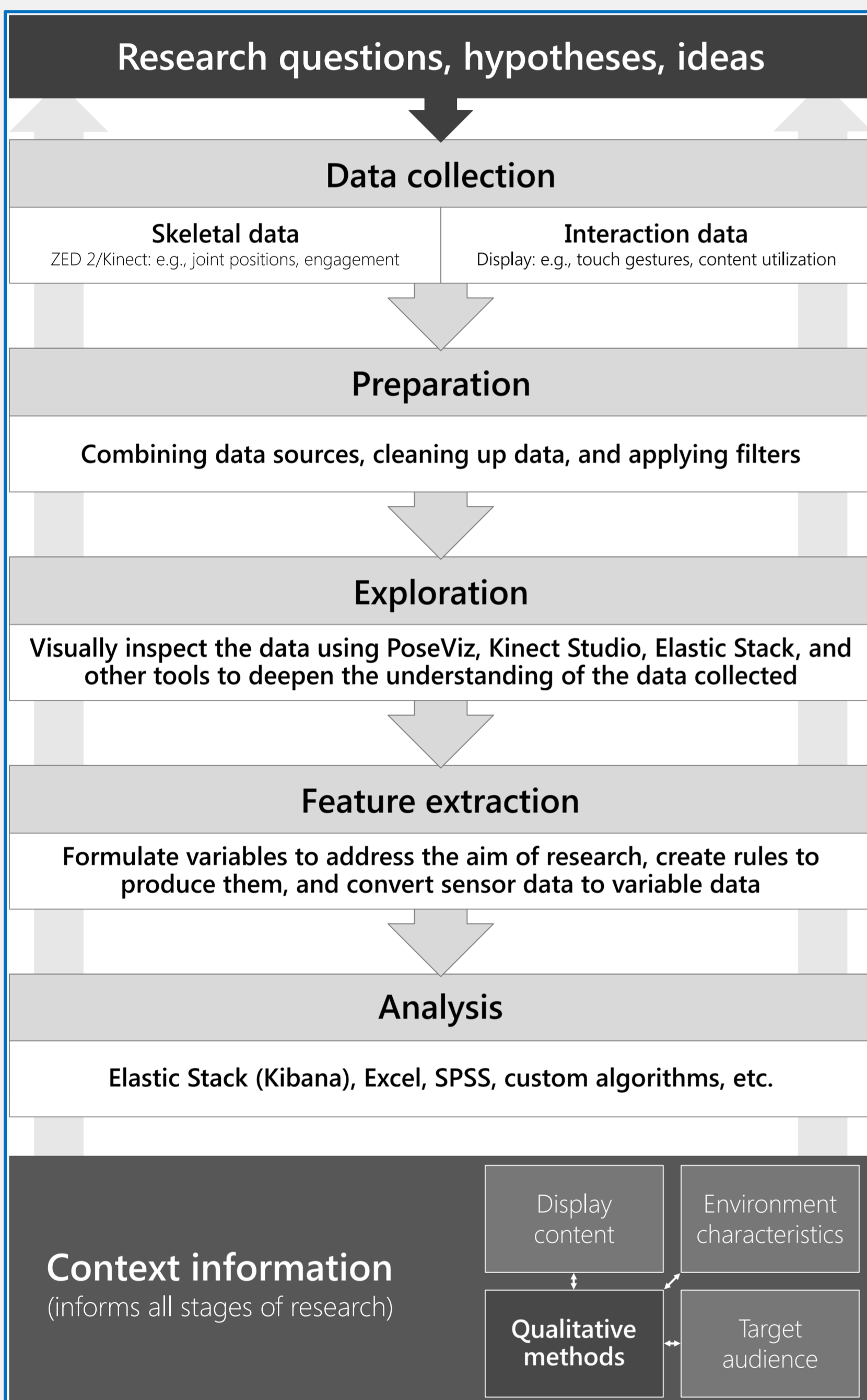


Figure 2. Our semi-automatic process consists of five individual phases in total: data collection, preparation, exploration, feature extraction, and analysis. Context information informs each of these phases.

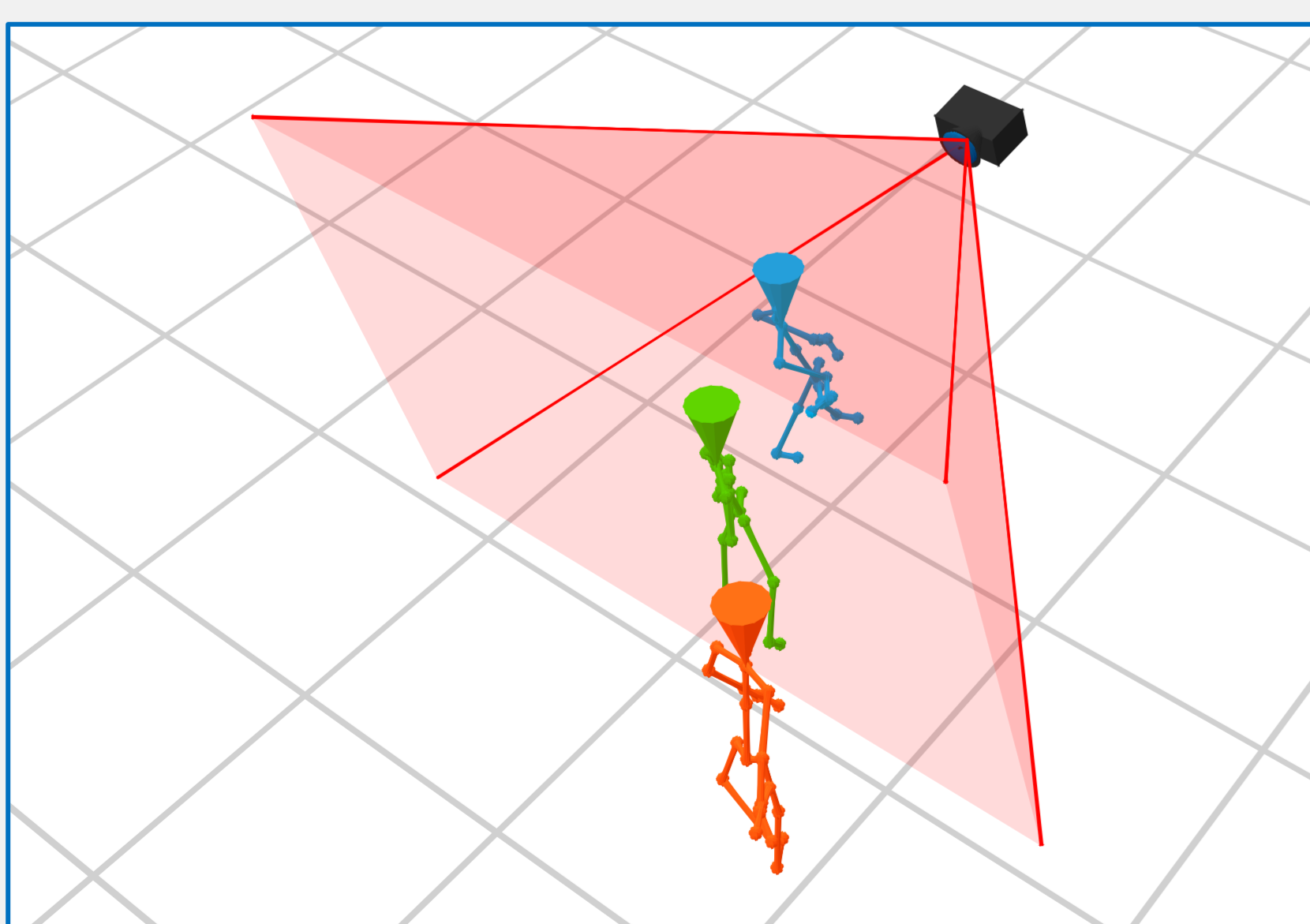


Figure 3. Our PoseViz tool depicting the silhouettes of a crowd in front of one of our display installations.

Methods



- Methodologically, our research faces the **challenges of in-the-wild research** (e.g., coping with the novelty effect, the use of robust prototypes, or the interweaving of different research methods).
- To a notable extent, our project builds on **skeletal data** recorded with depth-based camera sensors (see Figure 3) as a foundation to draw initial hypotheses regarding the Honeytrap Effect.
- In an interdisciplinary team of researchers, we use a **mixed-methods approach** combining qualitative content analysis of observations and interviews with quantitative evaluations of log data.
- Figure 2 summarizes our **methodological approach** and illustrates its five individual phases. A key variable in this depiction is the **context**, affecting both data collection and analysis, in which an ambient display installation is deployed.



Figure 4. (a) One of our display installations in a company's agile software development department near Hamburg. (b) A setup at the university's campus in Munich.

