Human Computer Interction 2

# AR City Plantner

Transform cities into greener, more participatory spaces by enabling collaborative urban greenery design through AR.

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We plan for the future

# Vision

Our vision is to **reduce bureaucratic barriers** and actively **involve citizens** in the planning and development of urban spaces. By leveraging **accessible tools like augmented reality**, we aim to empower **communities to collaboratively shape greener, more sustainable cities.**

# Research interest

**Lack of Greenery**
The absence of green spaces in urban areas contributes to poor air quality and higher temperatures, which can negatively affect residents' health and well-being. (Time.com, 2024)

**Lack of Tools**
**43 % of cities in Germany don’t offer digital participation** opportunities and participatory planning processes face and a.o. lack of interest and trust from citizens (Karic et al., 2023)

**Need for participation**
Citizens participation is **critical for innovation and creativity in urban** development (Anthony Jr, 2023)

**Opportunities of AR**

- AR can **increase the motivation to participate in planning processes** and increases the quality of participation processes. (Othengrafen et al. 2023)
- AR is able to make urban planning more accessile to citizens with no professional background as it doesn’t require deeper technical knowledge and the user can interact with the models. (Broschart & Zeile, 2015)

# Research Question

How does the use of augmented reality (AR) tools, compared to traditional urban planning methods, influence the level and quality of citizen participation in sustainable urban planning processes?

# Study Design

H1: Participants using augmented reality (AR) tools will demonstrate higher levels of engagement in urban planning processes compared to those using traditional tools.

Indicators of Engagement:

- More time spent on the task.
- Higher number of interactions with planning features.
- Increased sharing behavior (collaborating or seeking feedback).

**Experimental study**

Between subjects experiments:

- **Group A:** Participants will use the AR City Plantner app to design urban greenery projects.
- **Group B:** Participants will use paper maps, 2D planning software, and written proposals to complete the same task.

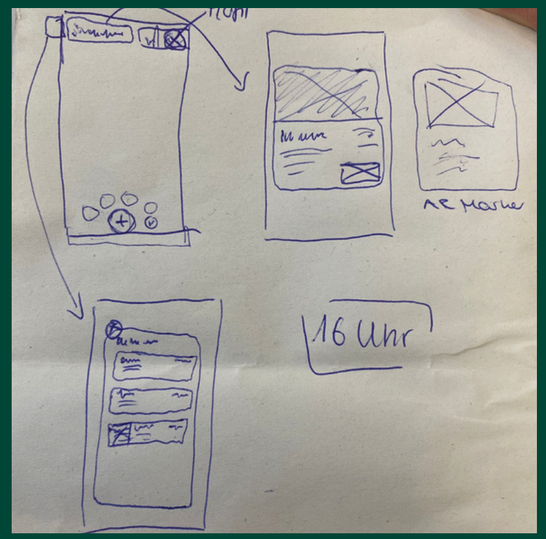
Randomized group allocation

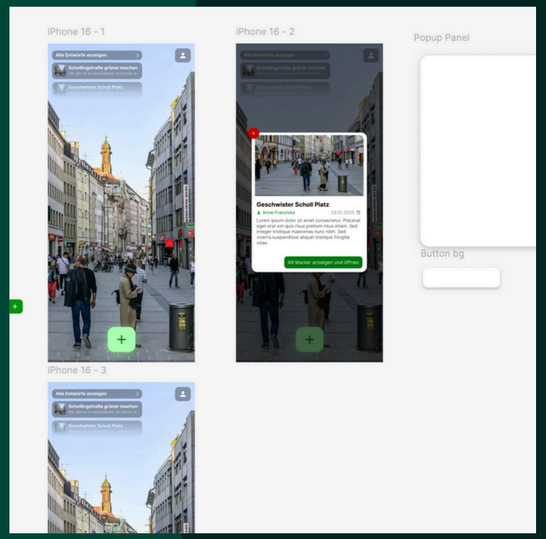
Independent variable: Participation Tool Used (AR vs Traditional tool)

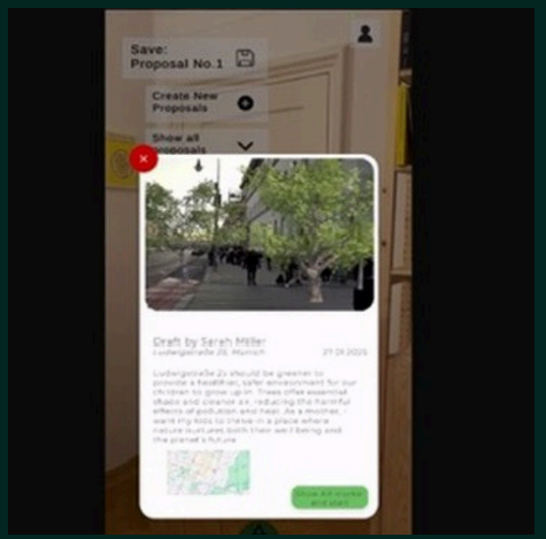
Dependent variables:

- Time spent on tasks in minutes
- Number of interactions

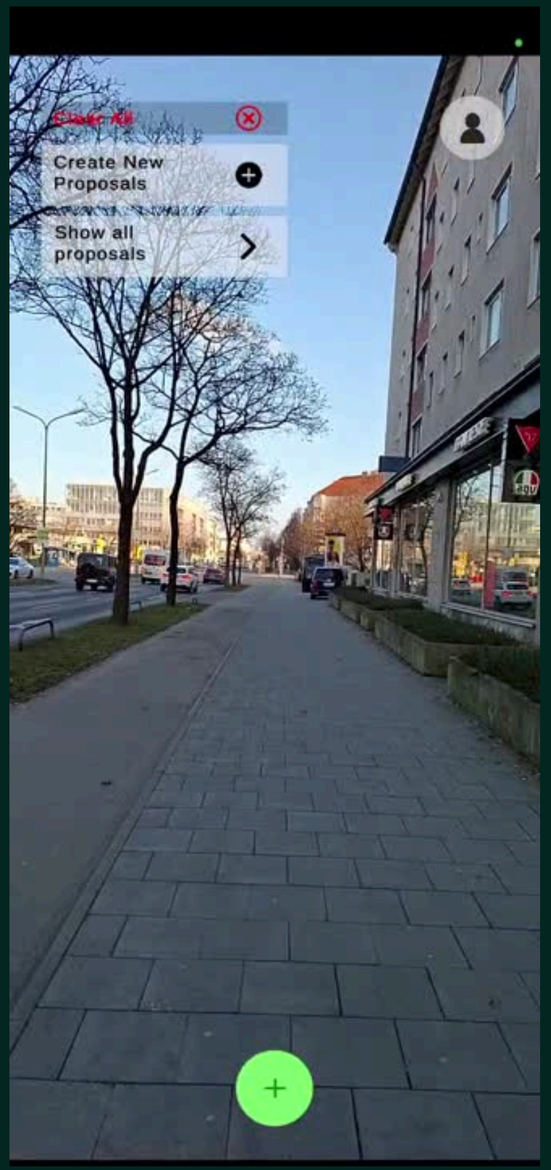
# Prototyping Process



# Demo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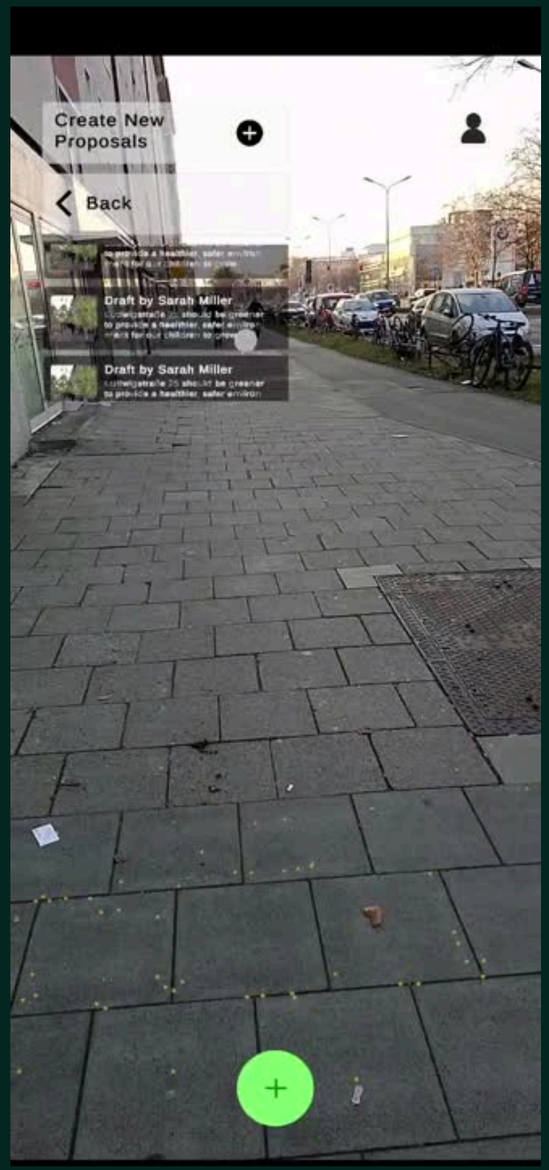
Create New Proposals
Show all proposals


Create New Proposals
Back
Draft by Sarah Miller
Draft by Sarah Miller

## Challenges

Learning Unity

UI Elements Difficult to master in Unity

AR Functionality & Stability

## Future Perspectives

Privacy & Data Protection

Voting Manipulation

VR Expansion

More Interaction

# Thank You For Listening!

# Looking forward to your questions

# Sources

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