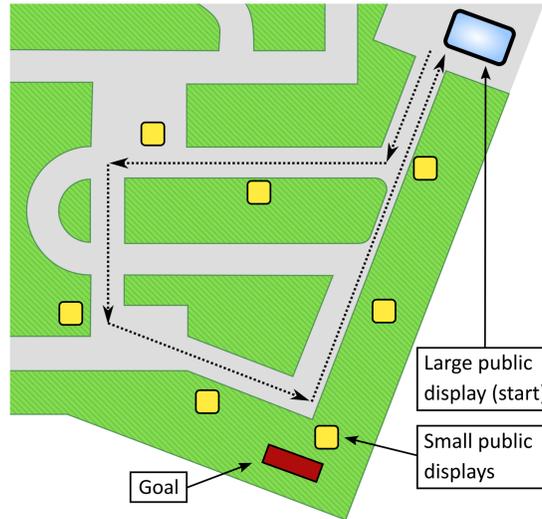


Activity Support for Seniors Using Public Displays: A Proof of Concept

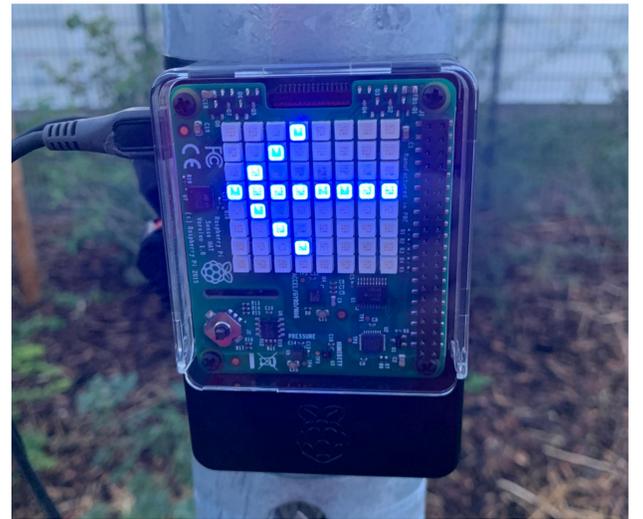
Julian Fietkau, Laura Stojko
Universität der Bundeswehr München



Large information screen at the Scooter-Park with a display of the personal activity board.



Map of all public displays installed at the Scooter-Park for the evaluation.



Small public display showing an arrow at the Scooter-Park.

MOTIVATION AND IDEA

- Seniors frequently reduce their outside-the-home everyday activities.
- Frequently cited reasons: age-related health and mobility issues, uncertainties about footpath safety
- We have designed and prototyped a system consisting of **large and small public displays** that can provide **personalized activity and navigation support** for older pedestrians.
- Goal: Increase the subjective **safety** and **motivation for outside activities** in the target user group

SYSTEM DESIGN

- Activity selection at large public displays (capable of recognizing registered users via Bluetooth) advertising possible activities in the neighborhood and the wider area
- Activities can be dragged onto a personal pin board to activate them
- The pin board greets the user with their favorite color and optionally by name
- Small displays deployed in large numbers along footpaths and at intersections then provide personalized navigation support
 - Navigation takes the user's individual mobility needs and path accessibility requirements into account
 - The small displays show symbols (e.g. arrows) in the user's color for navigation

METHODOLOGY

- Qualitative evaluation study with 7 participants (ages 26, 40, 51, 61, 64, 75 and 77), some seniors, some geriatric care experts
- Venue: "Senioren-Scooter-Park" (owner: Sozial-Holding Mönchengladbach GmbH)
- Semi-structured interviews and guided user tests of the live system following a pre-scripted scenario
- Qualitative analysis of interview transcripts (3 hours and 46 minutes of audio) consisted of open coding, axial coding and selective coding

RESULTS

Large display (activity selection)

- Presentation of possible activities with title, description and photo described as very useful and motivating by participants
- Opinions split 50/50 on extrinsic incentives: some users would prefer to receive material rewards for taking part in new activities, others would rather rely on intrinsic motivation
- Useful criteria currently missing in the activity selection UI: expected activity duration and specific mobility requirements

Small displays (navigation support)

- Frictionless interaction with small displays was praised
- Consistent placement of displays was mentioned as a concern: when only one intersection did not have a device, participants felt abandoned by the system
- Displays were rated as highly visible, not all symbols were equally easy to understand, arrows were rated consistently high
- Relying on the user's personal color for the display was also rated as a useful idea by participants, but was sometimes hampered by existing cultural meanings behind colors (e.g. red perceived as a warning)

