Hey, I’m James Hodge 👋

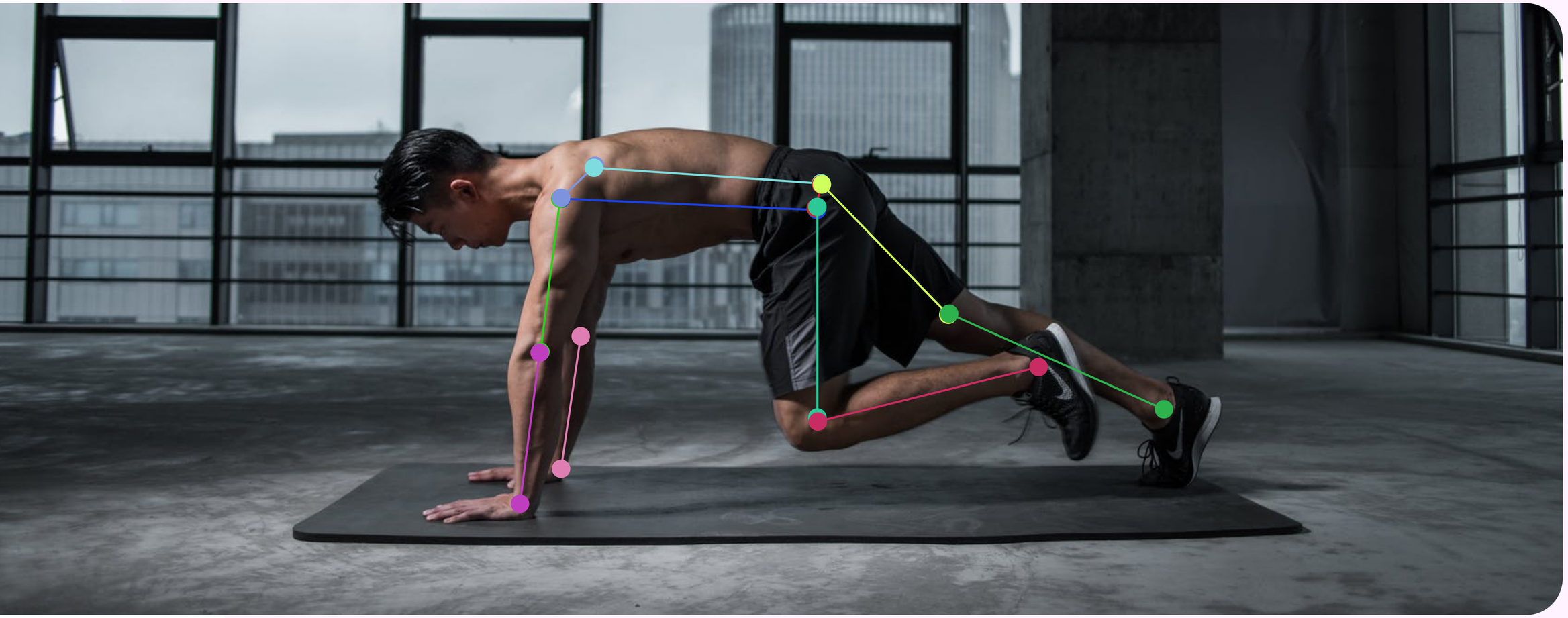
This is my portfolio

Contents

Towards Understanding People's Experiences of AI Computer Vision Fitness Instructor Apps

Samsung Research

Key Insights: AI, Fitness, Interviews, Computer vision, qualitative, dialogue interactions, pose-detection



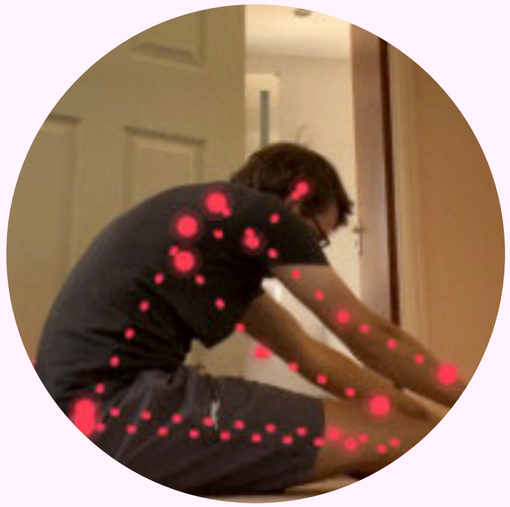
DIS'21 paper

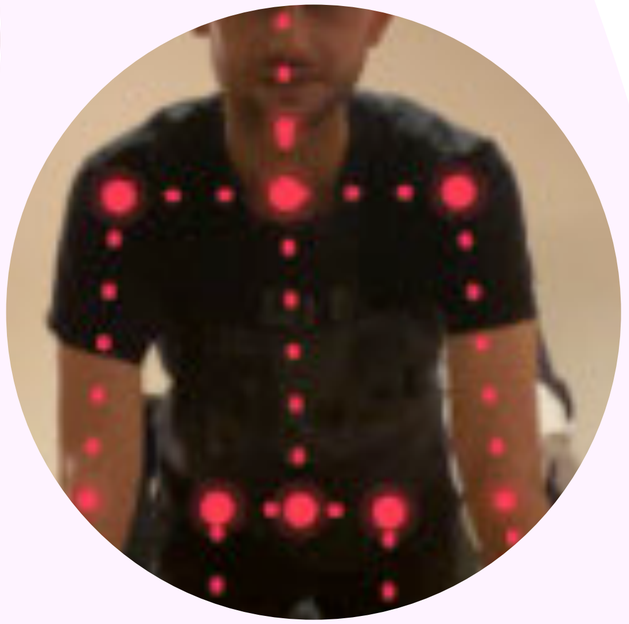
Overview

During my time at Samsung, the team conducted a study on understanding peoples experiences of AI computer vision fitness instructor apps. We ran a qualitative study with 12 participants who engaged in semi-structured interviews, workshops and recorded their workouts and interactions with a series of AI fitness apps. The team conducted a thematic analysis to present a series of design considerations to guide future contextually aware AI research in this domain.

Exploring Opportunities

To explore the area of AI fitness instructor apps, we selected five of the most popular AI fitness instructor mobile applications from the Apple iOS App Store. Further, we added a non-AI fitness instruction application to compare and contrast between AI and non-AI experiences. We then invited 12 participants to workout with three of the six apps over eight days to explore the opportunities and challenges that may arise when interacting with AI computer vision Fitness Instructions. We captured and reviewed these sessions with the additional set of semi-structured interviews and workshops focusing on participants wants and needs for future AI assistant implementations.



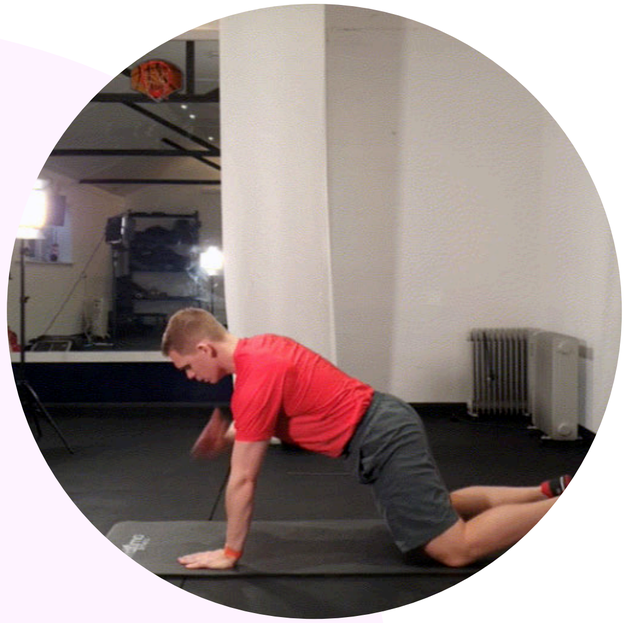


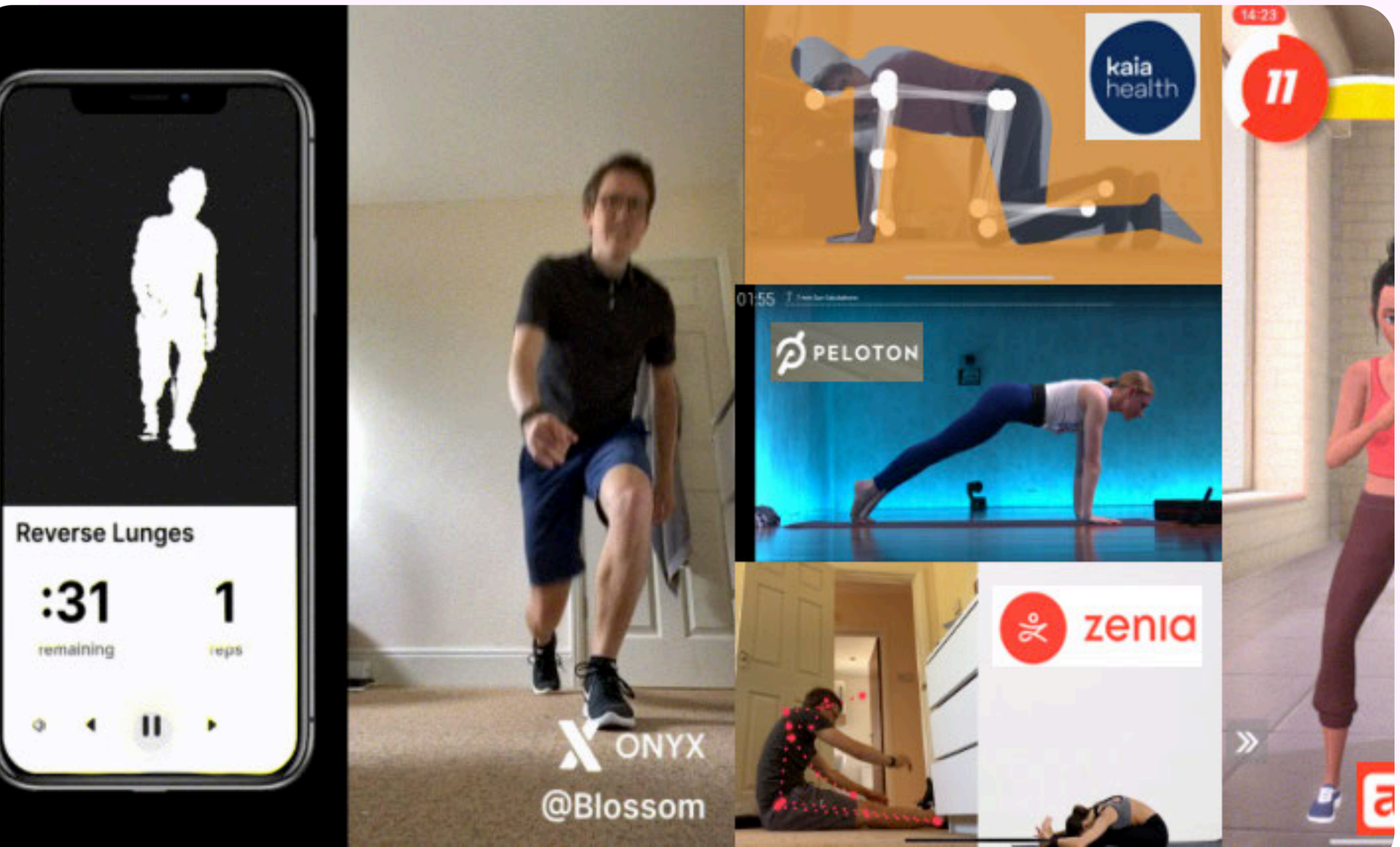
User Insights

Our user insights derived from the thematic analysis of 12 interviews, and researcher observations from participants working out, we highlighted a set of insights towards the limitations of computer vision - where participants found frustrations with inaccurate rep counting, lack of contextual understanding of what was being seen; visual feedback - the importance of post-workout feedback and workout metrics to provide meaningful summaries of data; dialogue with the AI - understanding participants hesitancy and expectations of what speech-to-text will understand and language comprehension; and adapting to the user - where user's wanted AI to adapt over time and reflect on the user's achievements to build a more meaningful relationship between the user and its AI assistant.

Result

Within Samsung, I provided a series of AI-fitness guidelines that are currently being implemented into a series of fitness proofs-of-concept. These guidelines are required to be disseminated and communicated across several interdisciplinary backgrounds, such as machine learning engineers, psychologists, designers, and managers. To contribute to the wider HCI community, we published our work at DIS'21, providing a series of design considerations that extended beyond existing research, such as: Feedback and motivation, personalising the experience, and building a relationship with AI.





What I would do differently

Developed a set of wizard of oz experiments based on a series of AI fitness features that take inspiration from the participants in the study.

Invited AI experts to the workshops to provide additional limitations and potentialities that AI assistants may provide users when working out.

Immersive humanitarian escape room

IFRC | solferino academy

Key Insights: Immersive Experience, mixed methods, Unity3D, zero-to-one space, game design

Article

Overview

We designed an immersive escape room to use five digital projectors to achieve 360-degree projection, as well as a suite of stage lights to set ambience and immersion. The game focuses on the five global challenges expressed in Strategy 2030. Through the duration of 30 minutes, teams of up to eight are transported to a range of immersive scenes from a pandemic control room, to the middle of a forest fire, to a recently abandoned home. Each chapter, teams solve puzzles that further highlight the challenges that Strategy 2030 must face over the upcoming years.

Exploring Opportunities

Working closely with the Innovation team at Red Cross, we developed rapid lo-fi prototypes of puzzles and immersive experiences to provide quick play-throughs and integrate insightful feedback from stakeholders. The team conducted a series of usability tests through this process, storyboarding the user journey and ensuring the content could be adapted to the four priority languages by Red Cross - English, Spanish, French, and Arabic.

User Insights

From our initial insights, I realised that our storytelling of various crises had to be carefully and sensitively considered appropriate for a wide range of cultures. When conducting our rapid prototypes, we found user's connected with the storytelling and empathised with the sensitive topics through environmental storytelling.

Result

We deployed the escape room at the International Red Cross General Assembly in Geneva in November 2019, where over 300 delegates from 60 National Societies played in teams of 4-6. In 2020, the escape room was nominated for DigitLeaders 100 list for Cross-Sector Digital Collaboration of the Year and the Games for Change award in the Best XR for Change category.

What I would do differently

A space to reflect on the impacts of the strategy post playing the game.

Additional accessibility options for playing. While we added subtitles and made the game wheelchair accessible, we did not have enough time to consider additional accessibility options.

Tailored VR experiences for people with dementia

openlab

Key Insights: Dementia, Virtual Reality, qualitative research, personalisation, user-centred design

CHI'18 paper

Overview

Despite indications that recreational virtual reality (VR) experiences could benefit people with dementia, this area remains unexplored in contrast to the body of work on neurological rehabilitation through VR in dementia. With recreational VR applications coming to the market for dementia, we must consider how VR experiences for people with dementia can be sensitively designed to provide comfortable and enriching experiences. Working closely with seven participants from a local dementia charity, I developed a series of bespoke VR experiences for people with dementia. This exploratory study provided novel directions for the future of VR and dementia cited over 70 times.

Exploring Opportunities

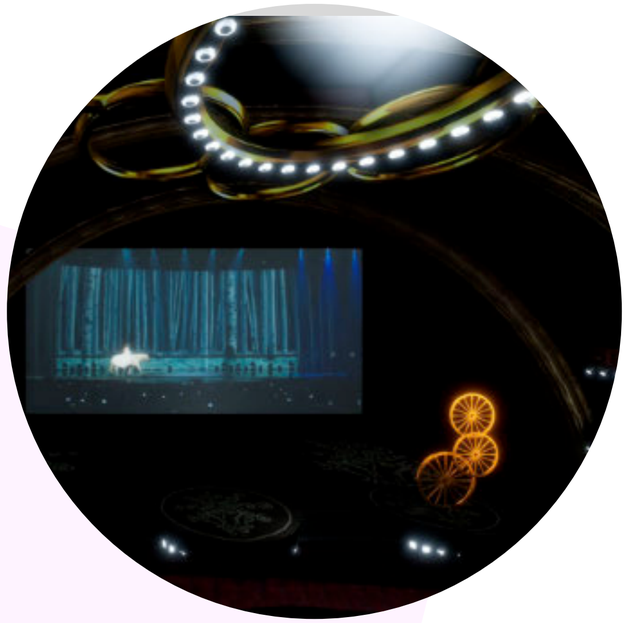
I carried out a series of workshops as part of a dementia cafe afternoon tea sessions. The workshops were organised flexibly to make space for normal afternoon tea activities. In this workshop, I presented several VR experiences and the potentialities of VR to people with dementia to ensure participants knew what could be developed. Using audio recordings from the in-depth interviews with people with dementia and researcher field notes, I conducted a thematic analysis to explore the different themes and interests of using VR with people with dementia.

User Insights

People with dementia found headsets quite intimidating apart from Google Cardboard as it was easily held. Care partners and people with dementia used VR as a sharing activity by taking turns looking at the VR environment and then describing parts to focus on. The freedom of VR offered people with dementia to lead the experience and explore freely for how they desire. Within this user research, they became active participants who led us through the environment.

Result

I designed three unique virtual reality experiences. These consisted of: a park that reassembled a local park; a UK beach with interactive components such as a horse and sandcastle; and a Shania Twain Concert Hall tailored towards a couple with dementia where Janet had interests in experiencing Shania Twain music in a new medium. This work was published at a high tier conference called CHI'18, which received an honourable mention award.



What I would do differently

Explore other sensory experiences such as taste and smell.

Conduct longer-term engagements with people with dementia to provide more meaningful relationships between myself and the person with dementia.

Paid attention to the physical design of VR headsets by exploring how to personalise and tailor the headset to the owner.

Designing 360 media experiences for families living with dementia

openlab

Key Insights: Research through design, experience-centred design, VR, qualitative research, co-design

CHI'19 paper

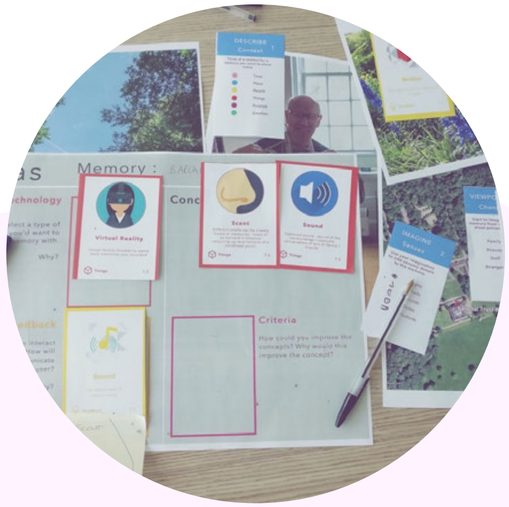
Article

Overview

Although designing interactive media experiences for people with dementia has become a growing interest in HCI, a strong focus on family members has rarely been recognised as worthy of design intervention. This paper presents a research through design (RTD) approach working closely with families living with dementia to create personalised media experiences. Three families took part in day trips, which they co-planned, with data collection during these days providing insights into their shared social experiences. Workshops were also held to personalise the experience of the media created during these days out. Our qualitative analysis outlines themes focusing on individuality, relationships, and accepting changed realities. Furthermore, we outline directions for future research focusing on designing for contested realities, the personhood of carers, and the ageing body and immersion.

Exploring Opportunities

To explore the type of experiences families with dementia may want to engage with, I adapted interviews to better fit people with dementia that combined ethnography and research through design. I co-designed a set of days out with all three families to create enjoyable or memorable moments, which we then sought to capture and document with rich multimedia. This work was captured using photography and audio recordings and more contemporary technologies such as 360-degree video cameras. To ensure the captured moments was engaging, I held individual workshops after the days out.

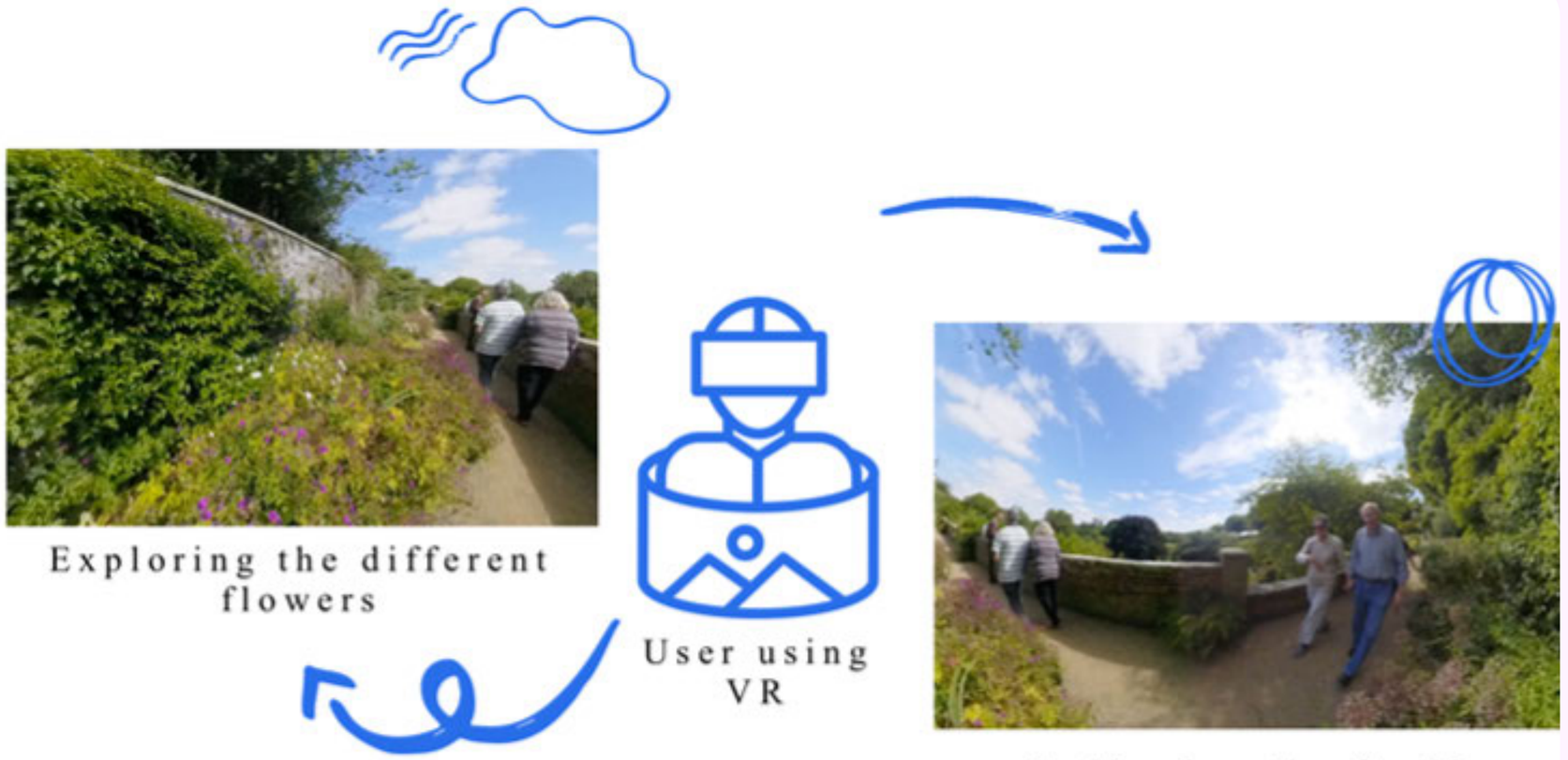


User Insights

The study design aimed to ensure that participation was as meaningful as possible for the families by making an impactful choice as to when what and how the study design was run. My design approach created a strong bond between the researcher (myself) and the families. It helped reflect on how dementia affected the family positively and negatively. The closeness to the families then helped structure important qualities in designing technology for each individual.

Result

A series of different ways to interact with the captured videos that the families recorded on their days out. This consisted of combining physical objects and digital interactions together to make VR onboarding more meaningful and easy to use for people with dementia. For instance, people with dementia can scan NFC tags attached to postcards resembling the day out that will load a Youtube video to their Oculus Go. I designed non-digital artefacts such as dioramas and moment boxes consisting of the photos captured on the families days out.



What I would do differently

Developed processes for families to co-create additional day's out and other moments of living with dementia

Involved people with dementia at the beginning of the project to provide a research agenda that was closer to their desires and priorities

DemVR: A hackathon for designing VR shared experiences for and with people with dementia

openlab

Key Insights: Hackathon, public engagement, collaboration, dementia, designers

Article

Overview

Recent Human-Computer Interaction research has addressed emerging approaches for public engagement; one such public-facing method which has gained popularity over the previous decade have been open design events or hackathons. In 2019, I ran DemVR, a hackathon event that invited designers, technologists, and students of these disciplines to design Virtual Reality (VR) environments for people with dementia and their care partners.

Exploring Opportunities

The hackathon was split into two engagement phases. The first was a six-week pre-hackathon phase: this consisted of deploying an online platform (called Ideaboard) to support designers/developers in pitching their potential hackathon ideas and receiving feedback from people with dementia and care partners. The second phase was the two-day hackathon event itself. Participants formed teams to compete for £1,000 & £500 prizes by creating prototypes of VR experiences for people with dementia and their care partners.

User Insights

My analysis presents the nature of team members' participation and the impact of structural factors of the event on design outcomes. I explored the different reasons participants were motivated to participate in the hackathon. Motivation for involvement ranged from personal experiences to learning, albeit collaboration between teams being hindered by competition. I also compare participants' ways of incorporating their new understanding of dementia into their design ideas to highlight critical differences between those with and without extensive experiences of dementia. Overall, these findings raise some important considerations for design events, such as best understanding participant involvement, designing for the 'absent user', and redefining collaboration between different communities.

Result

This hackathon resulted in forty participants who formed nine teams who developed and presented novel ideas centred on creating shared experiences for people with dementia to engage with VR. These ideas were radically different to one another and included experiences such as: multi-sensory beach VR experience with heated fan, sand and seaweed for smell; VR garden and dog companion for those living in isolation without access to these in real life; shared virtual world with people with dementia to take part in group activities such as sing-along, guess the place, and solve the riddle; and a forest-like environment for memory stimulation.

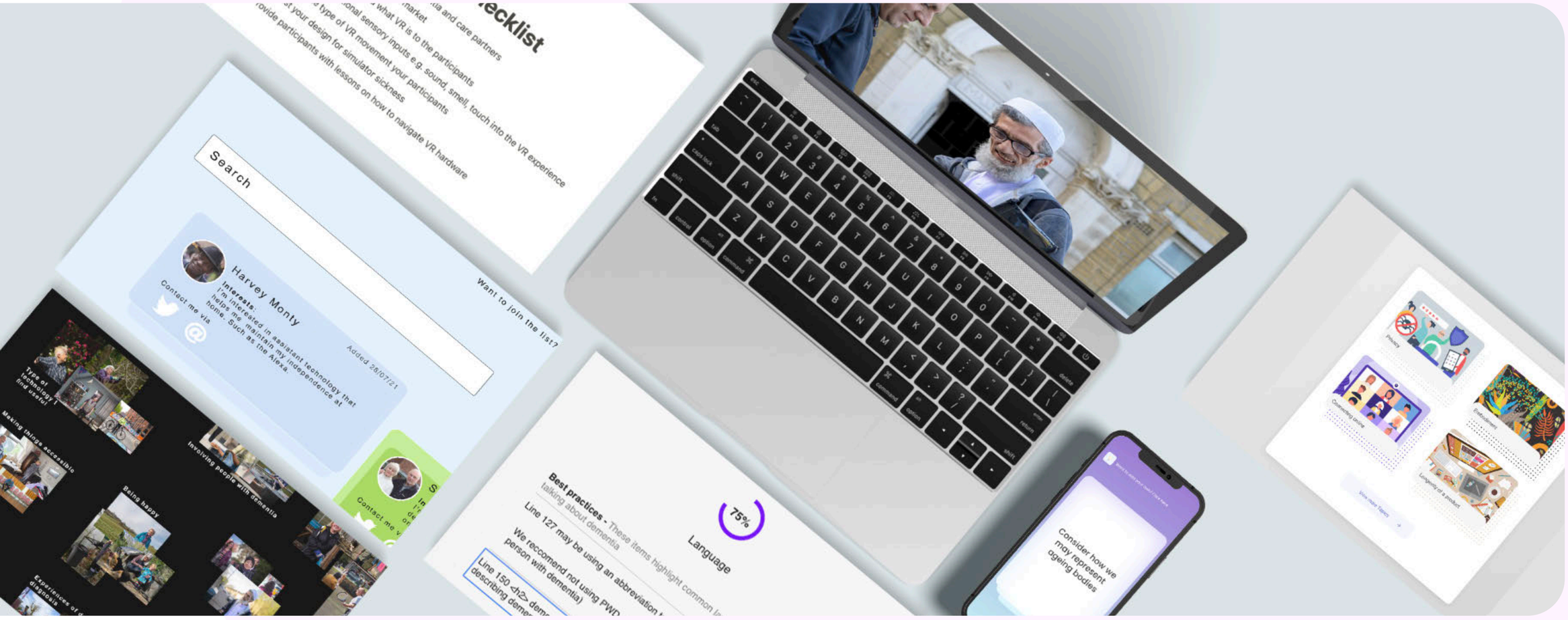
What I would do differently

To have reduced engagement barriers and ensured better representation of people with dementia, coordinating participation on technologies that people with dementia are already comfortable with may have facilitated additional interest by care partners and people with dementia.

Dialogical Dementia Design (D3) Toolkit

openlab

Key Insights: co-creation, online workshops, collaboration, dementia, designers

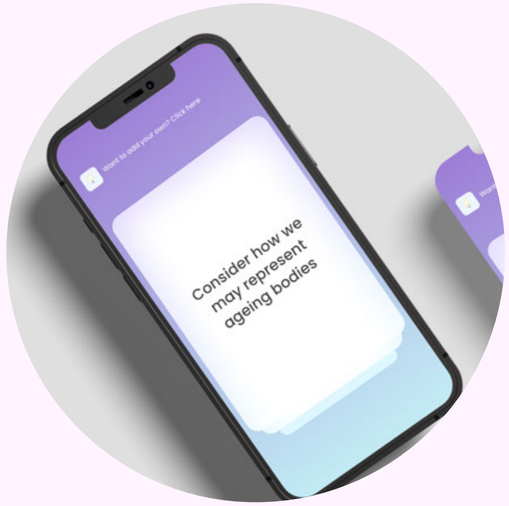


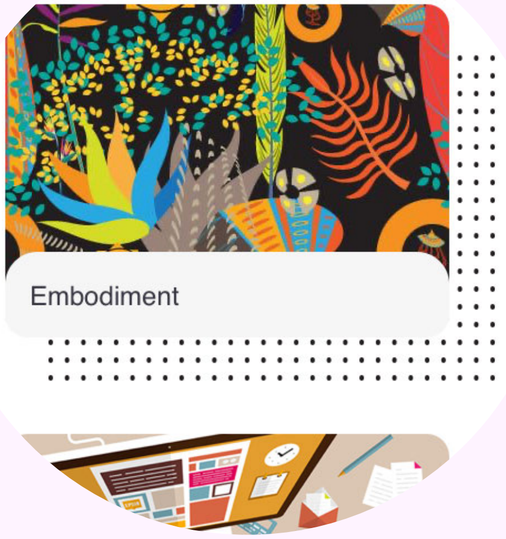
Overview

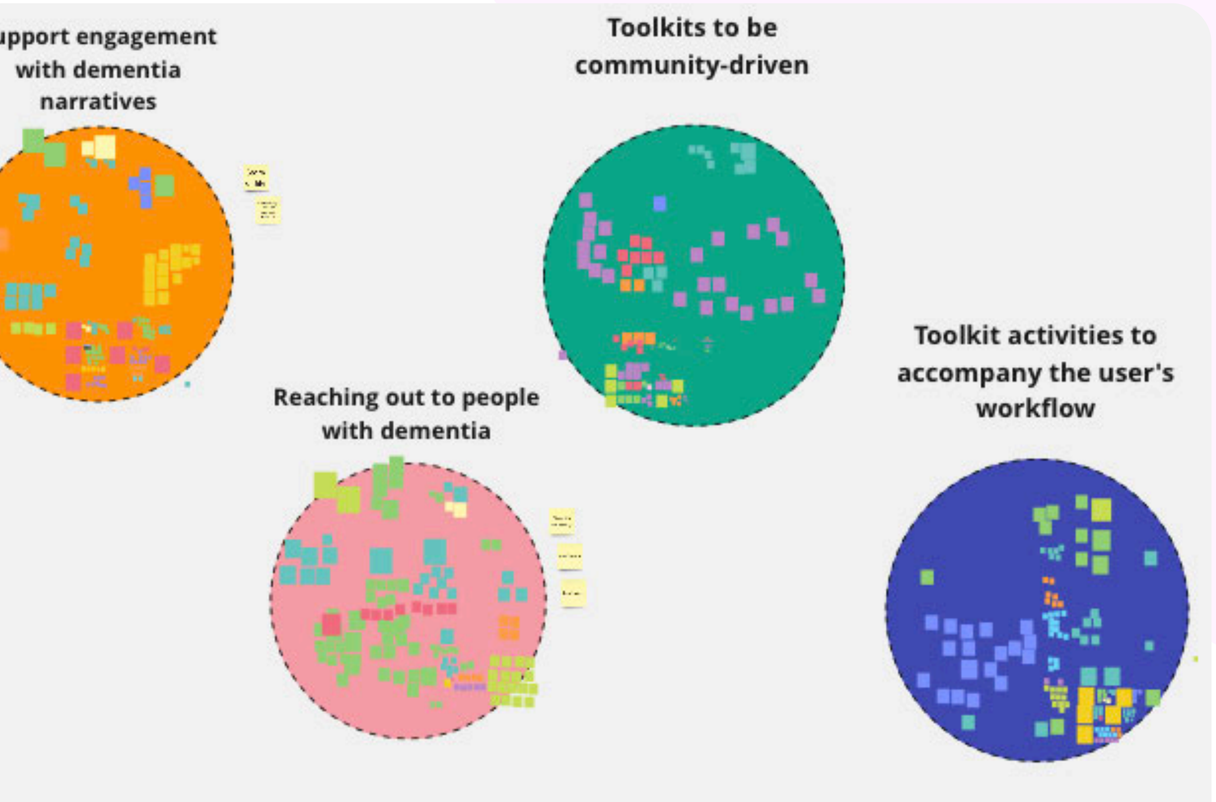
HCI research has seen a growing interest in creating technologies with (rather than for) marginalised communities. Concurrently, other research has focused on creativity support for designers and developers, most often creating toolkits. This study united these methodological streams to collaboratively develop a toolkit to support design for dementia by inviting designers, developers and people with dementia.

Exploring Opportunities

To explore this area of work, I invited seven designers, four developers, and five people with dementia to participate in a three-stage iterative process of workshops to explore the type of resources developers and designers need to design with people with dementia and investigate how people with dementia envision their potential participation within a toolkit. The process included a process of affinity diagramming to design a set of design priorities for a dementia design toolkit and a set of workshops and interviews to reflect on the lo-fi prototype.





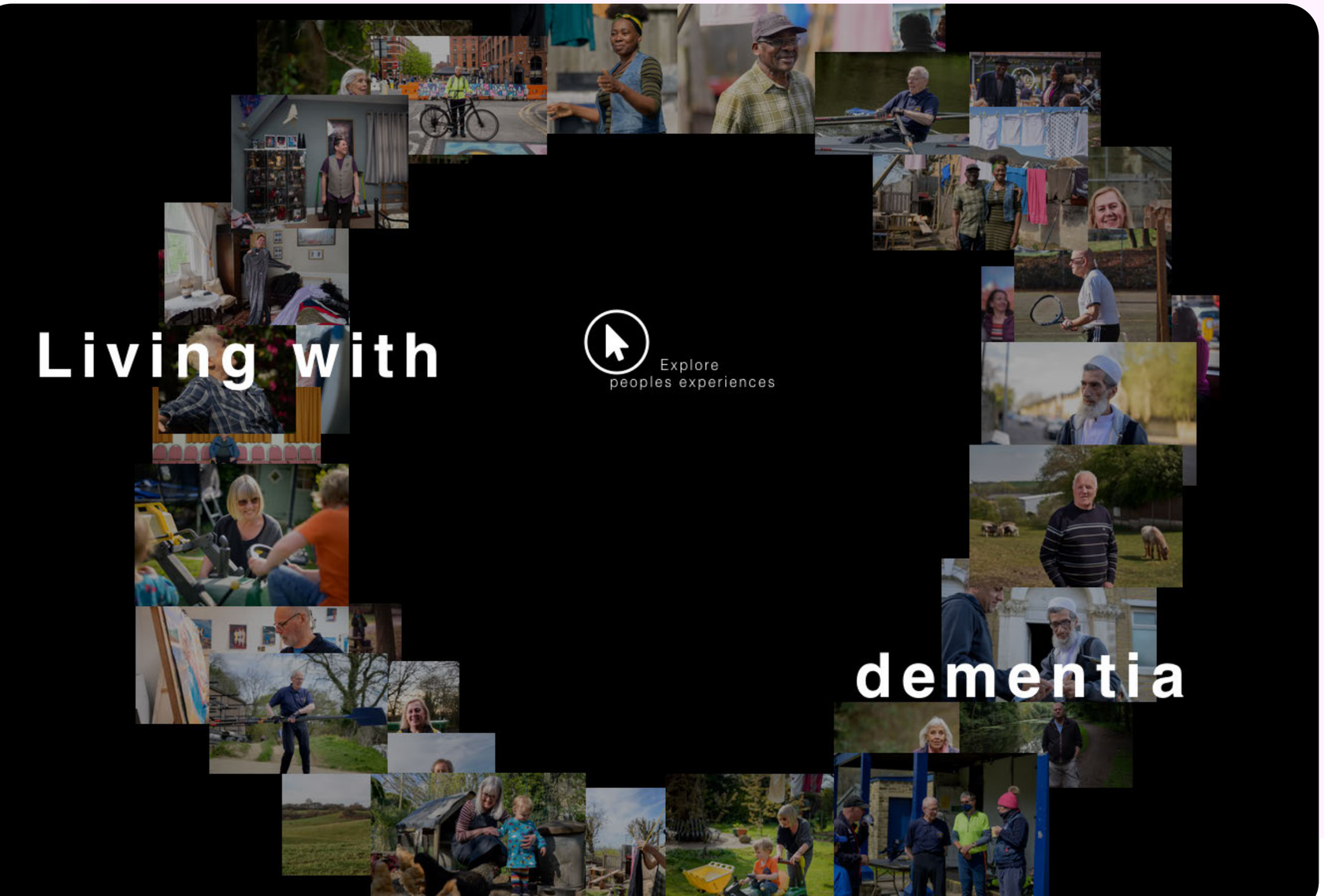


User Insights

Within the study, working with several stakeholders provided questions around the challenges of co-creation through safety and privacy, the sharing of the 'designer' role between the different stakeholders, and finally, the type of incentives required for participation and engagement in curating a toolkit. Furthermore, upon participants' reflection on the toolkit, conversations highlighted how we might balance participants' privacy, safety, and due recognition; priorities in growing a community-owned toolkit' and the accountability and responsibility that designers and developers carry in adapting their working practices for designing within sensitive areas.

Result

The result I designed was called the Dialogical Dementia Design (D3) toolkit. Within this toolkit, I provide several activities to provide designers/developers with ethical and sensitive ways to engage with people with dementia dialogically, opportunities to reflect and critically think about relevant aspects of dementia and provide curation of toolkit resources to be community-driven through the inclusion of varying stakeholders' involvement.



What I would do differently

People with dementia who may not have access to technology were excluded due to COVID-19 complexities. Being able to support their involvement within the work would have helped to represent those at later stages.