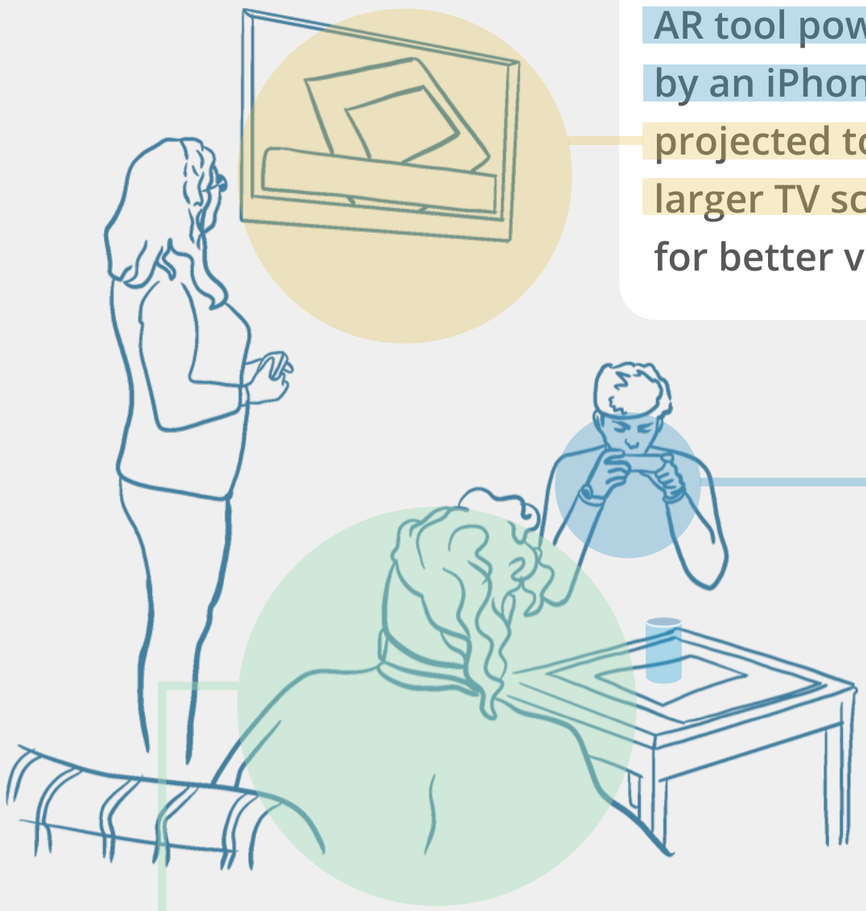
CONTEXTUALIZING SMART HOME TECHNOLOGIES WITH AUGMENTED REALITY TOOLS TO FACILITATE AGING IN PLACE

Laura Levy, Ben Thompson, & Maribeth Gandy
[laura; bent; maribeth]@imtc.gatech.edu
Institute for People and Technology
Georgia Institute of Technology
Atlanta, Georgia, USA

METHOD

TOOL

AR tool powered by an iPhone and projected to a larger TV screen for better visibility.



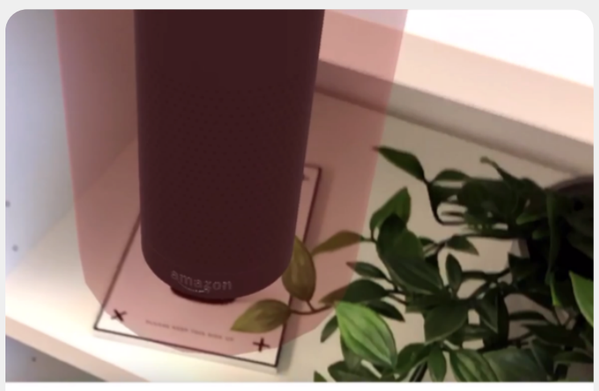
The tool uses paper markers placed in a real home environment to show how Alexa works using life-sized models and shaders to indicate important factors, such as microphone and electrical cord reach.

PARTICIPANTS

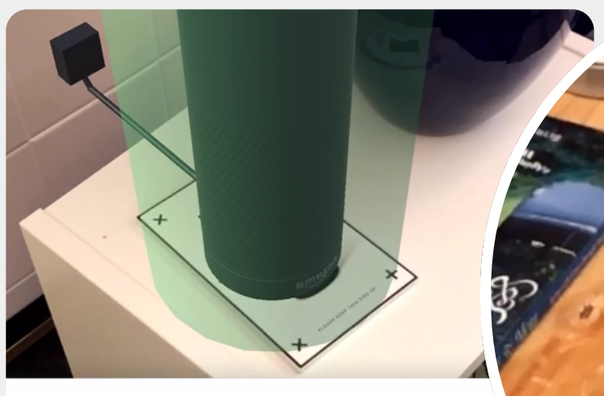
SAMPLE
9 Older Adults 68-80 yrs

60+ YEARS OLD

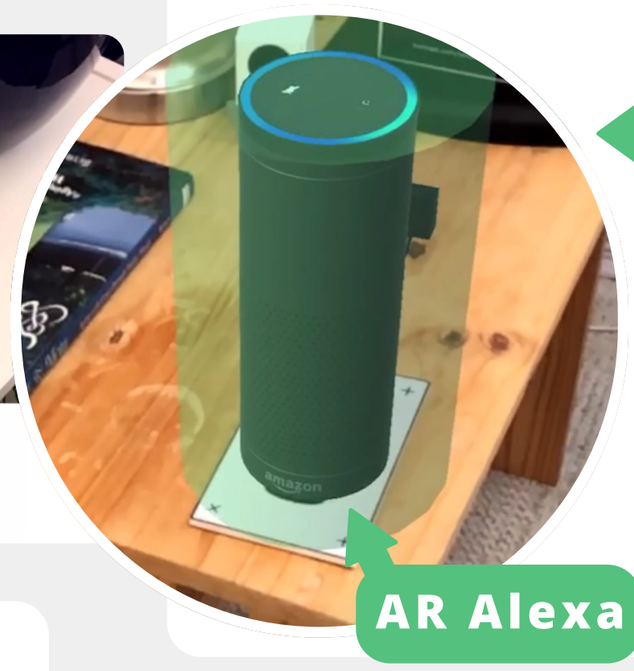
10+ YEARS LIVING WITH MOBILITY IMPAIRMENT (WHEELCHAIR, CANE, ARTHRITIS)



Red Area means it **won't** work at this location



Green Area means it **will** work at this location



AR Alexa

PURPOSE

For older adults aging with mobility disabilities, smart home technologies can help them to age in place.

Home assistants, like the Amazon Alexa, can act as a central control hub for smart lightbulbs, thermostats, door locks, and switches without ever leaving your seat.

However, home assistants have invisible interfaces putting high demands on:

A user's **ABILITY TO REMEMBER** commands and know what the device can do.

FINANCES, as smart home tech can be a costly investment and a difficult buying decision for those unsure of the value that these devices bring to daily life.

Augmented reality (AR) has the ability to reveal the invisible in the context of the real world and let you virtually try before you buy.

We built an AR mobile tool to show how (a virtual) Alexa works in the context of an actual home environment.

RESULTS

As compared to traditional instructions, participants...

Felt **MORE CONFIDENT** in their **UNDERSTANDING** for how Alexa works.

PREFERRED THE AR tool over paper instructions.

Felt **MORE CONFIDENT** in their ability to **TROUBLE SHOOT** an Alexa on their own.

FELT MORE INFORMED if Alexa was right for them in their daily lives.

NEXT STEPS

Building on this research, we are exploring the creation of personalized AR experiences that act as guided install tools to show users exactly how to install smart home technology in their own home. This research seeks to understand the value of these experiences in supporting feelings of confidence, mastery, and overall understanding to support aging in place using smart home technology for those with mobility disabilities.

ACKNOWLEDGEMENTS

This work is funded by grant #90RE5016-01-00 from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), a Center in the Administration for Community Living (ACL), Department of Health and Human Services (HHS). Poster design and art: Claire Cheng