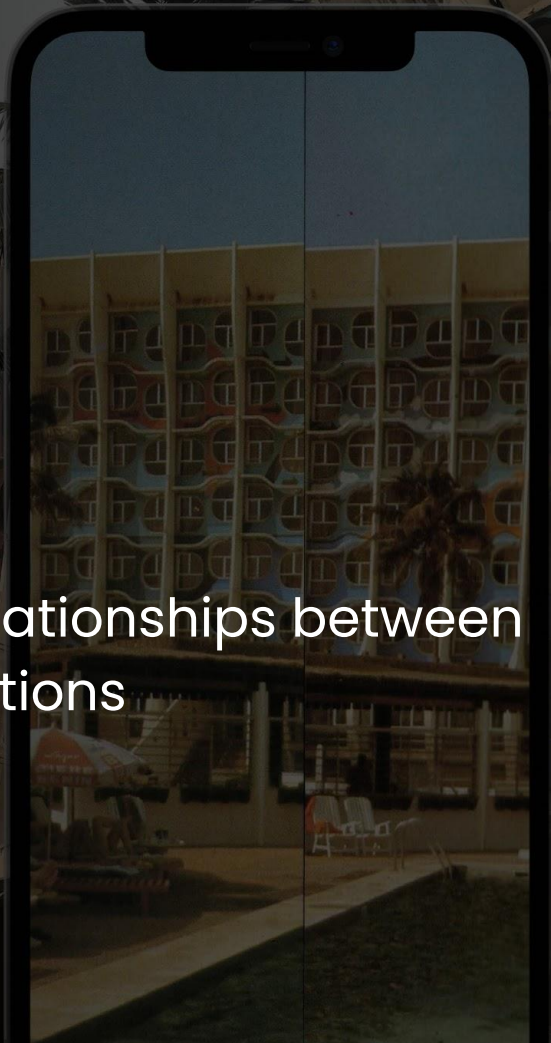


HISTORIAL

Fostering intimate relationships between
people and their locations

Kekeli Sackey

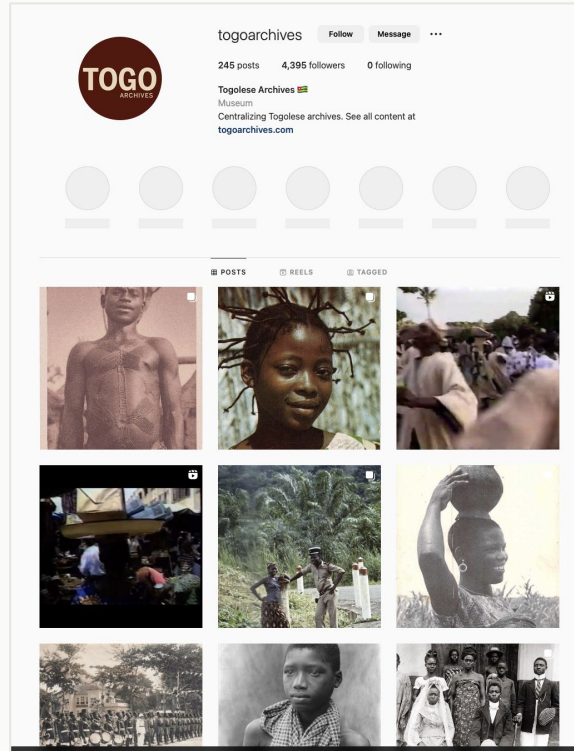
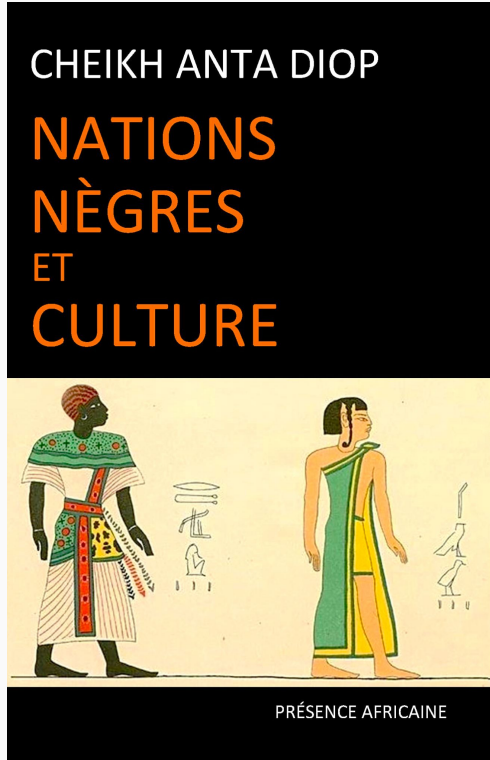
MPS UX Design, **MICA** 2022



History is all around us

Learning about history should be
fun, immersive and interactive.

How we learn history today



Access to historical materials have increased due to digitization efforts, but history still feels out of reach and people have to be intentional about consuming it.

For people of african descent, access to historical materials told from an african perspective is expensive and difficult to reach.

Sources

- [Black history is not being taught properly in US schools](#)
- [France to frame a new law for restoring looted artifacts](#)

How might we increase the reach to multimedia historical artifacts that are often inaccessible?

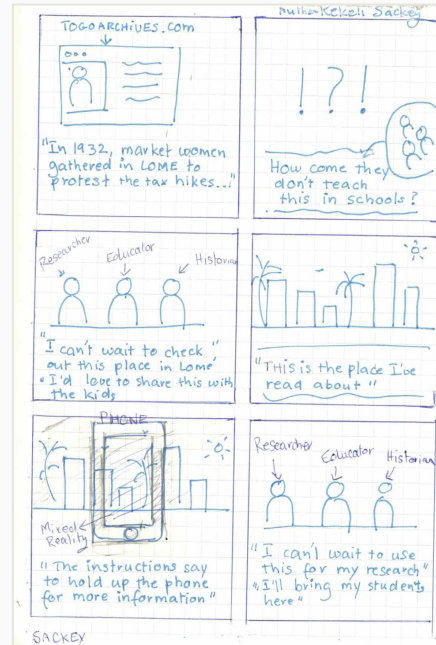
HISTORIAL

The vision

A user experience that allows people to explore their history on the go, so they can reconnect with their surroundings in a more intimate fashion.

Who stands to benefit?

- People to like to explore their surroundings
- People who want to learn about the history of places where they live
- Travellers



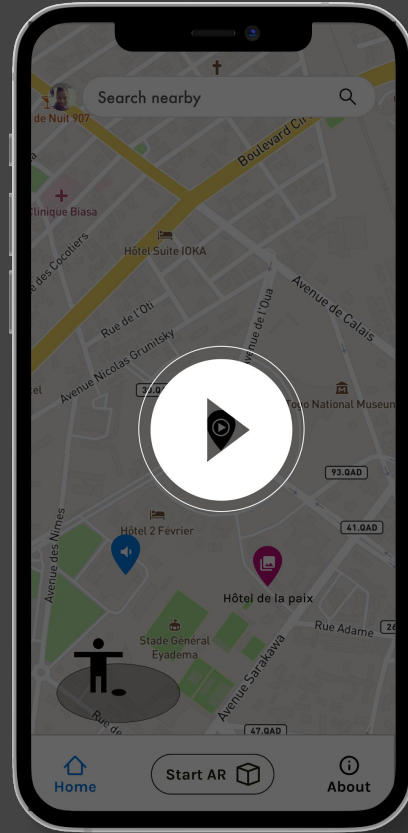
Above: Storyboarding the experience



Above: Physical marker, an analogous reference of the vision

The prototype

Press play to go to the
prototype link



02 —

The how



Leveraging AR for storytelling

AR tech superimposes computer-generated images over the real world and allows users to learn and practice new skills in real-time. Unlike VR, which requires headsets, AR experiences are **accessible on mobile**, allowing more people to explore on their own, independent of location.

Today...

- The education market is considered a top-three promising area of development for AR and VR technology. Source: [Augmented Reality in Education: Interactive Classrooms | Maryville Online](#)
- The AR and the VR market is set to reach \$856.2 Billion by 2031 (Source: Allied Market Research, [Article](#))
- AR is used in many industries including healthcare, education, gaming and retail



Pokemon Go, AR game



With AR, I just think it ties it to real things. It can be, you know, augmenting an experience rather than trying to just replace it.

User Interview, Participant 1

Constraints & Assumptions

Projected outcomes

01 Increased engagement with historical materials

02 People can virtually explore locations they can't go to due to various reasons (archeological preservation, limited capacity)

Constraints

01 Project timeline

02 Designing an AR experience that includes photos, audio, and videos only

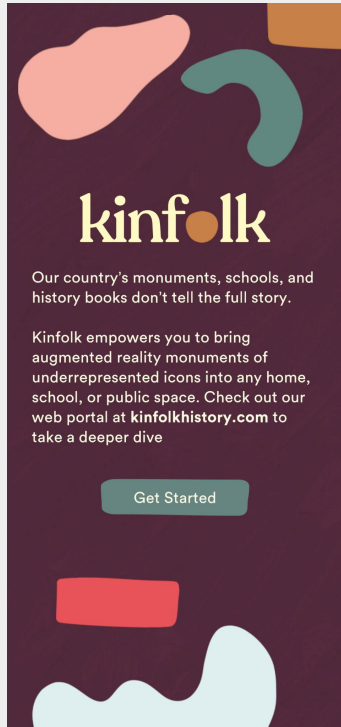
03 Using Figma to design and prototype the AR experience

03 —

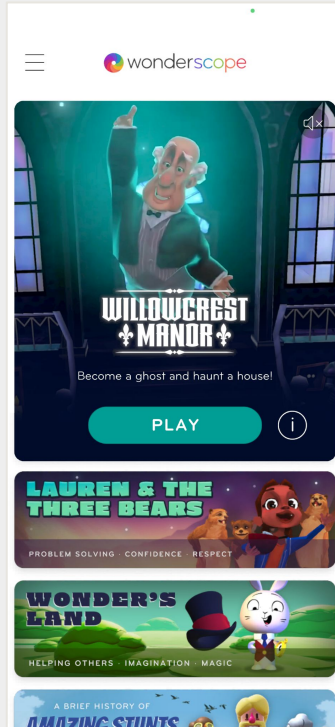
Research



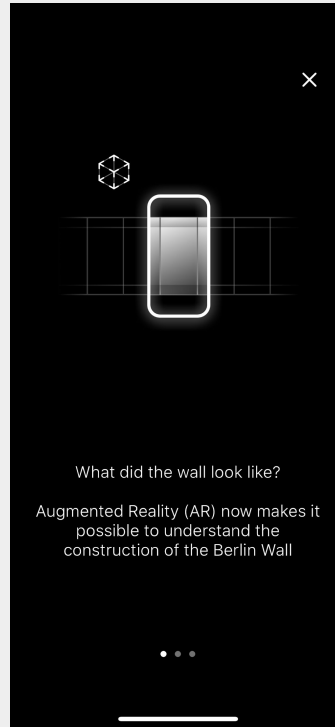
Competitive Analysis



Kinfolk



Wonderscope



Mauer

Insights

Interactions

- 1) Reliance on phones for immersive experiences lead to fatigue.
- 2) **Users can't use more than one surface at a time.** AR apps have a requirement to choose a 'placement' for the story/experience before it begins. Users can't use more than one surface at a time. Moving the device mid-experience causes users to lose their position in the story and choose another placement to continue the interaction.
- 3) Zooming in and out is replaced with physical navigation to and around elements, which is counter intuitive when the convention on screens is to zoom in and out.

Usability

- 1) Gestures and Interactions are not intuitive and rely on trial and error
- 2) AR apps that focus on history feel like add-on experiences to complement existing ones. (Eg., BBC Civilisation AR, Skins and Bones)

Research Goals & Participants

Research goals

- Learn about the pain points faced AR users in the e-learning space
- Understand the constraints faced by those who build these experiences
- Assess whether cultural knowledge preservation is a viable use case for AR
- How are africans keeping in touch with their country's history today?

Methodologies

- Qualitative interviews: 1-1 (45mins)
- Secondary research on the use case of e-learning with AR

Participant profiles

- People who have used AR apps for e-learning
- People who have used AR to create learning content
- Togolese people, Africans
- Subject Matter Experts

Research participants

Number of participants: 9

Key Learnings

Goals: Understanding the use case for AR, and the painpoints in the e-learning space

How they use it

- Research participants use AR apps for **education and entertainment**.
- **App usage frequency** varies per context. For participants who use it to learn history, usage frequency is irregular, as they go back to it every now and then to learn something new. Those who downloaded AR apps for educational purposes are usually instructed to use the apps, so there's an incentive to keep up with grades.

What they like about AR apps

- **Better retention and information recall** when it's used for learning
- Interactions make games more engaging

Common pain points

- **Device compatibility, poor graphics, sound distortion, and CPU usage.** Some apps are not easy to navigate. Often, the experience feels disjointed and unrealistic when the content quality is poor. Additionally, the experience feels laggy when you're interacting with the interface, causing a disruptive experience
- **Location dependency:** Some apps require you to be at a specific location, which is not ideal if you don't want to travel or move around.
- Device reliance: Over reliance on phones is cumbersome because you'd have to carry your phone around to experience AR
- For creators, there's a **multi-step process to get people to the content**.

Areas of improvements

- Voice assistance to improve the experience
- Getting people to the content faster by reducing the multi-step process to get there.
- Smaller devices, devices with better camera



It's a very useful way of learning because having a pictorial representation in your mind helps to build your knowledge and remember, and it helps you remember what it looks like. And I think even after a longer period of time, you can easily recall this.

User Interview, Participant 1

Key Learnings

Goal: Assess the viability of using AR for cultural preservation

How they stay connected to their history

- Africans on the continent and in the diaspora use social media to continue learning about their country's history. They also use mediums like podcasts
- People want an easier way to transfer knowledge to their children.

How would they use it

- Revisit historical figures and ask them questions about why certain things happened

Common pain points

- History is often told from a western perspective

For the sake of our kids who will be needing to know more about history, I wish there would be a better way to break it down to them.

User Interview - Participant 5

04 —

Designing the solution



Ideation

Key features from first round of ideation

1

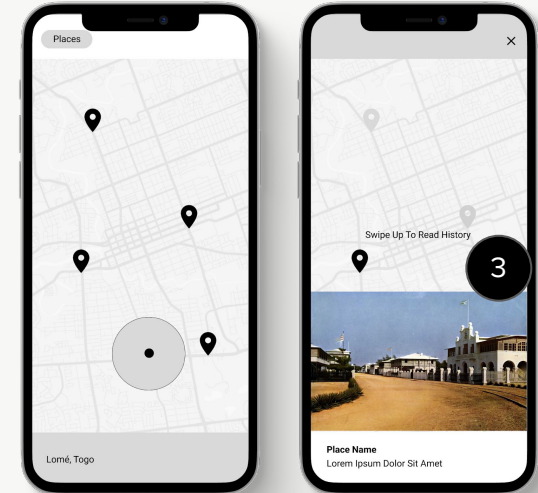
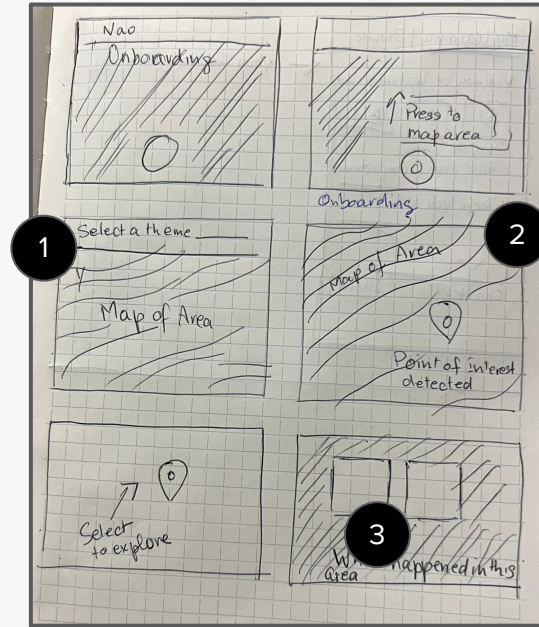
Map view: the map view allows the user to view and interact with points of interest

2

AR mode: User navigates their neighborhood in AR mode and see how some areas used to look like in the past

3

Gallery mode allows users to view and read more about the place's history



Above: A low-fidelity ideation of the experience

Content Presentation

I looked at examples that blend the old and the new



Source: Dr Belinda Kendall, LinkedIn

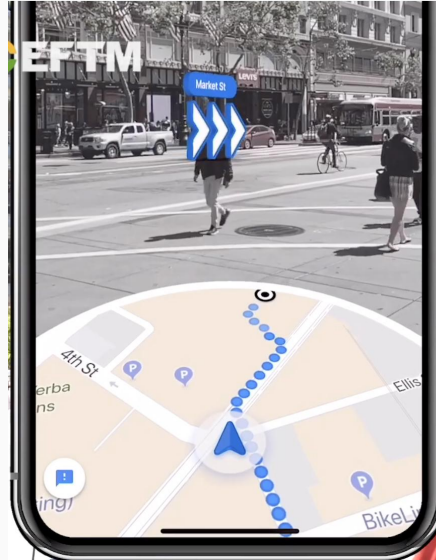


Navigation

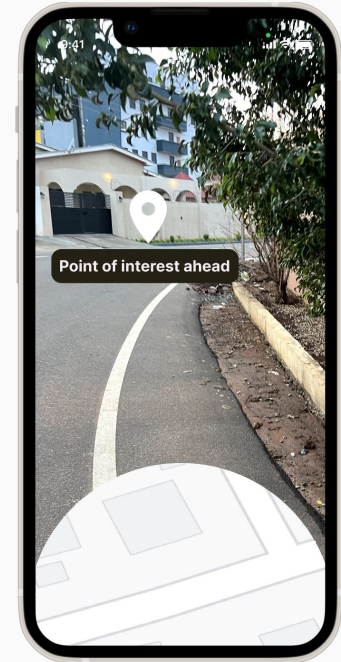
I looked at navigation patterns in familiar interfaces and games



Source: Minimap in the Witcher 3

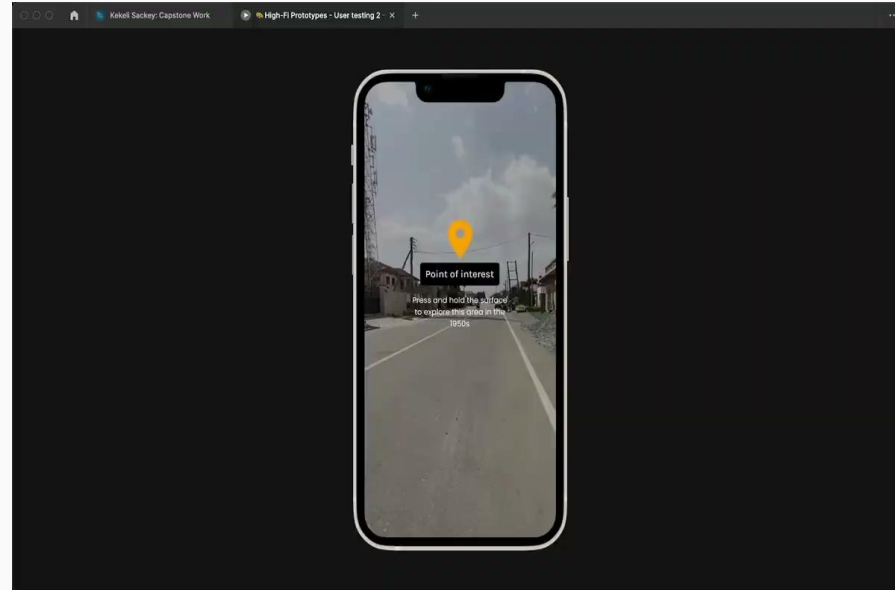


Source: Google maps AR



Design concept (mine)

Prototyping interactions



Adding interaction to figma and incorporating icons into the video

05 —

Testing the solution

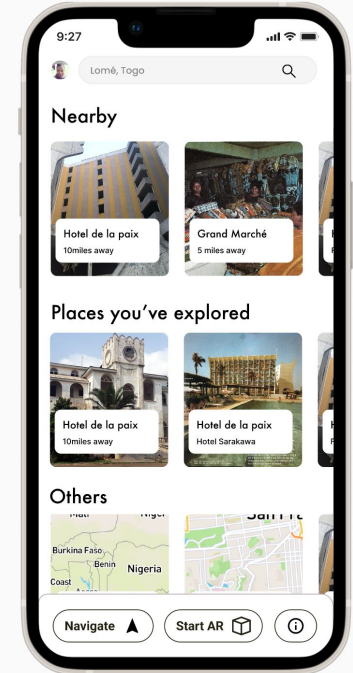
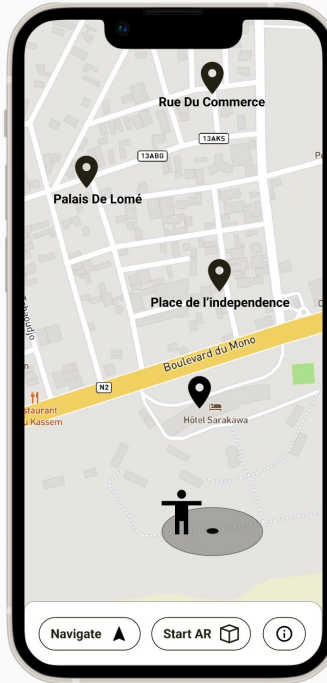



Insights from user testing

1. **Lack of context:** People expect to see more information about the location they visit
2. **Poor navigation** made it difficult to go through the prototype
3. **Limitations of the prototype:** Participants expected to zoom in and out of the experience

Recommendations & Next steps

- Include onboarding steps in the process
- Include relevant navigational CTAs so people can easily get through the user flows





*I really, really love this concept. I don't have, again, I don't have all the context, but I love what you're doing. I love how direct it looks real easy. It looks clean. Besides some of the confusions I have, I think you're onto something really, really cool. I've never seen this, I've never heard of it. I've seen AR in use in like different, so many different use cases, but I've never seen this. And **I think there's a lot of value.***

I think of myself as a tourist and I'm visiting certain places how useful I would or how much I would enjoy using something like this. Or even as a local, a lot of times we walk around places where we really don't know the grounds we stand on or the buildings where you walk by and how educated this would be. So cool stuff

Usability Testing, Participant 2

“*I would love to see this in
real life.*”

Usability Testing, Participant 3

“*It's just like an intimate way for me to travel by walking. So having an app like this, I believe, not only does it show me what's nearby right away as I'm using it, but like it teaches me about the history of the area. Nice. And **I don't need to like get a tour guide because the app is my tour guide.***”

Usability Testing, Participant 3

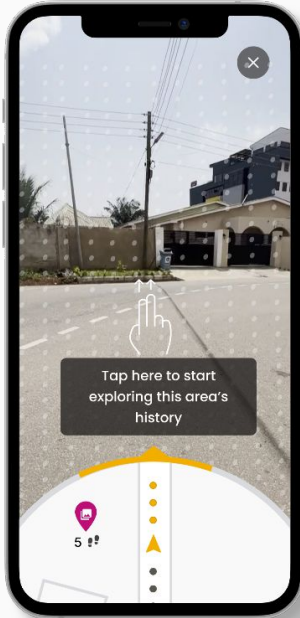
06 —

Outcomes

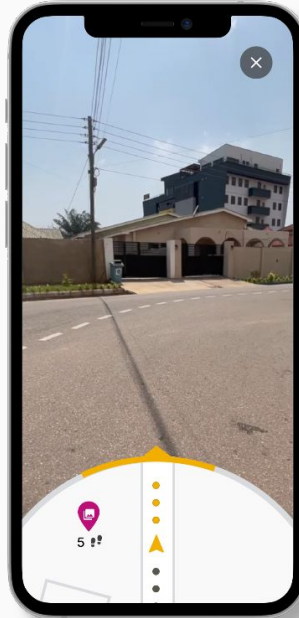
Prototypes & Reflections



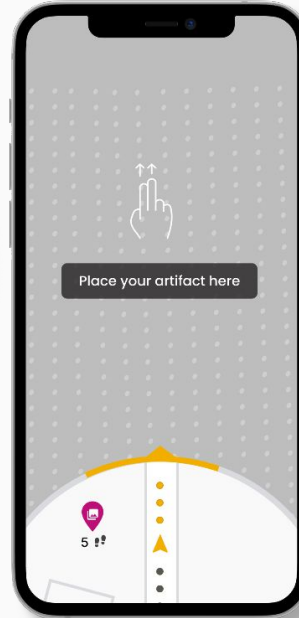
Interaction breakdown



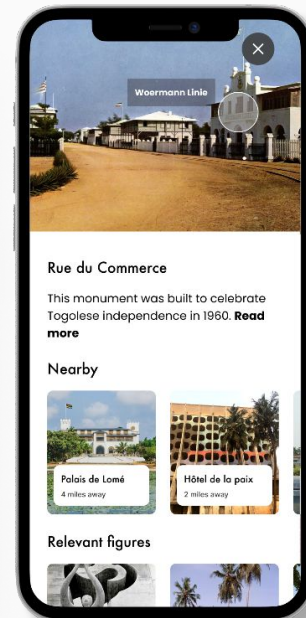
Tap the screen to start exploring



Video plays and point of interest appears



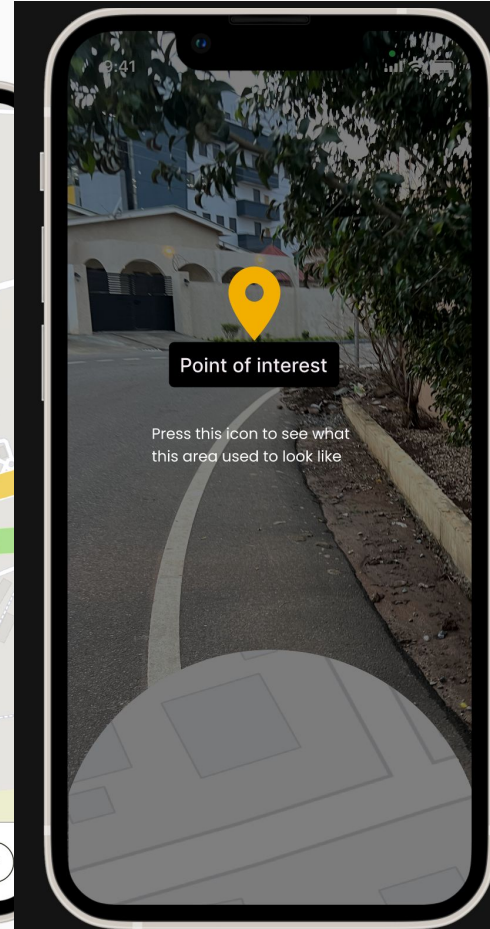
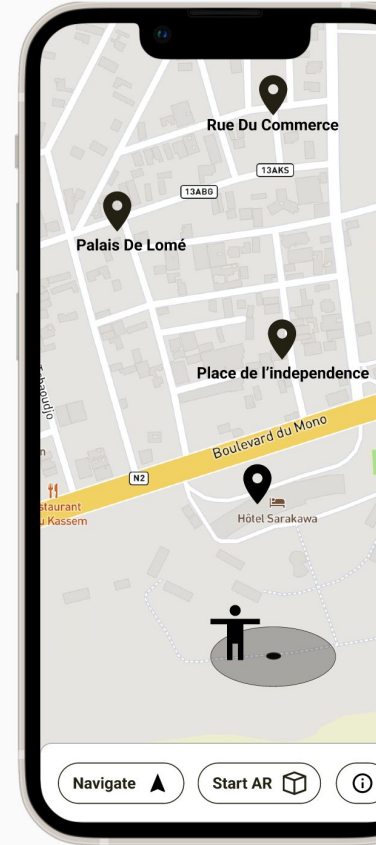
User taps the screen and is prompted to place the artifact



User views gallery artifact

To avoid friction in the experience, I focused on:

- Using familiar UX patterns: the user starts with a map
- Embedding the AR onboarding into the overall experience. Most AR apps start with onboarding the user about AR technology. Research has shown that this creates friction in the experience. Source: Nielsen Norman Group, [*AR-Onboarding Walkthroughs in Mobile Apps*](#)



07 —

Reflections



Reflections & Next Steps

- When it comes to onboarding, AR calibration and onboarding doesn't need to feel like a chore. That experience can still be designed in a way that feels seamless to the user

Next Steps

- Refine the animations and update graphics
- Explore ways to incorporate haptic feedback



Thanks for reading! 🎉

Appendix

- [Research Plan](#)
- [Project Plan](#)
- [Interview notes](#)

Readings and sources

- [\(PDF\) Archeoguide: An augmented reality guide for archaeology sites](#)
- [Augmented Reality in Education: Interactive Classrooms | Maryville Online](#)
- [7 Augmented Reality Tools for the Classroom](#)
- [Wonderscope](#)
- <https://augmented-classroom.com/>
- [Historical Storytelling Through Augmented Reality - IBI Group](#)
- [Historik app uses AR to combine the modern world with historical events, landmarks](#)
- [Augmented Reality Disadvantages - Read Before You Adopt | Aircada Pro.](#)
- [GitHub - microsoft/MixedRealityToolkit-Unity: Mixed Reality Toolkit \(MRTK\) provides a set of components and features to accelerate cross-platform MR app development in Unity.](#)
- <https://www.nngroup.com/articles/ar-walkthroughs/?lm=ar-calibration&pt=article>
- <https://arvr.google.com/experiences/>