

OBSCURA

Project Overview for MOHAI

Asa Symons, Caiya Wiltshire, Hridae Walia, Nick Hallin



Team Members & Availability



Asa Symons

~10 hr/week



Caiya Wiltshire

~5-10 hr/week



Hridae Walia

~10 hr/week

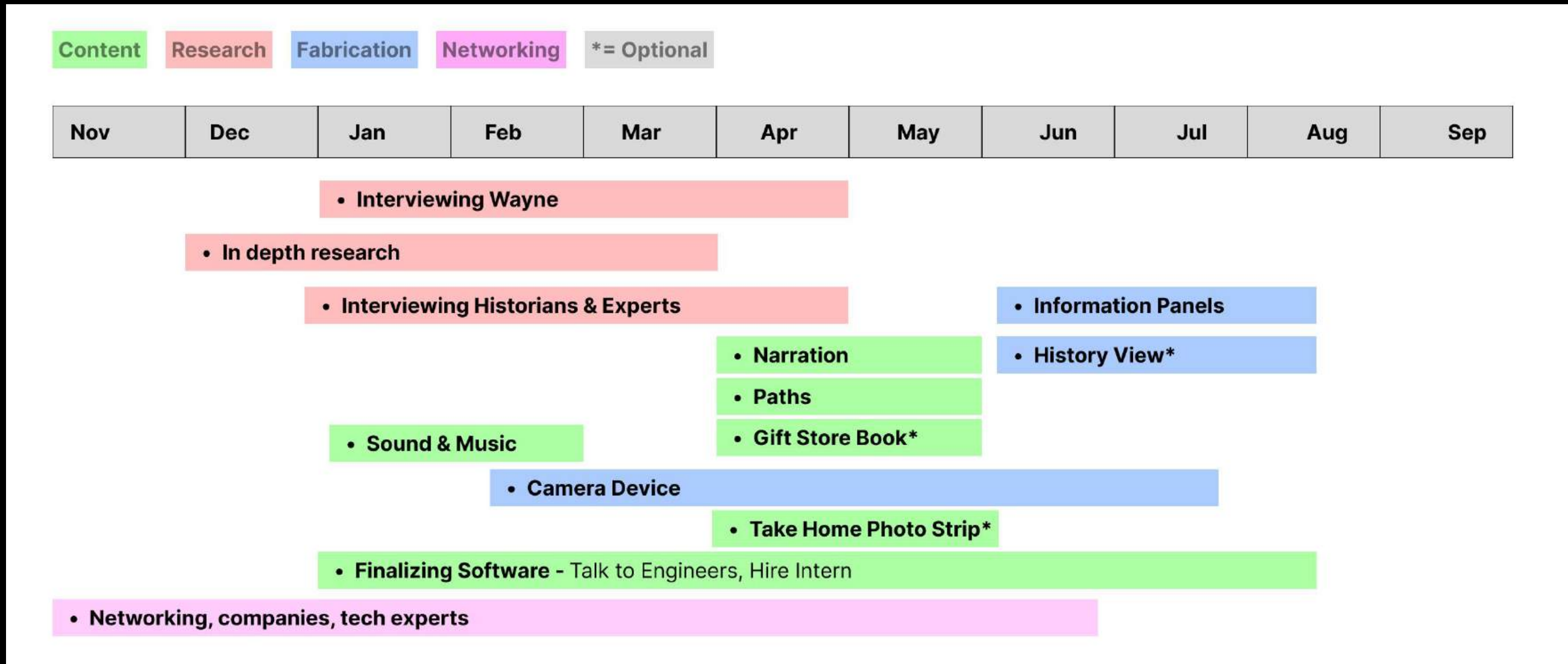


Nick Hallin

~10-15 hr/week

This is a rough estimate based on how much work each of us are expecting to do, we expect this to change over time

Project Timeline (estimated)



This is the estimated timeline for the different parts of the project, we expect this to change over time.

OBSCURA

Design Overview

Introduction

Obscura is a photographic documentary experience in two parts. The Portola Obscura immerses audience members into the photographic perspective of Wayne Wong. In the Forum, an audience follows the Portola Obscura user's gaze as it charts a personalized narrative trajectory through the images.



The Story

In 1946, Wayne Wong — a Chinese-American 19 year-old — arrived to Japan having been recently drafted into the US Army Signal Corps. Armed with a camera acquired through trading of sake with locals, Wayne took around 300 pictures. The film, however, was never developed. 80 years later his son discovered the photos' existence.



Research Based Design Directions

FAMILY

Create a solution that helps people **connect with the older members of their families** through photography

HISTORY

How might we present the images in a manner that explore the **distinction between the modern roles of analog and digital photography**

MEANING

Creating a **social experience** that helps people form a **personal connection** with these images



Narrative Trajectories

Based on our research, we derived the most salient categories of user interest that could be used to deconstruct the images. We then assigned colors to these categories, using them for annotation and narrative trajectory.



Narrative Trajectories

Built and Natural Environments

The scenery of Japan as captured by Wayne, from untouched landscapes, to cities marred from firebombing



Narrative Trajectories

Faces

Portraits of Japanese people living through the post-war period and years of US occupation



Narrative Trajectories

Clothing

Stories of class, work, image, aesthetics and survival reflected through the things we wear



Narrative Trajectories

Occupation

Images of military artifacts, soldiers, and the transformations to Japan wrought by US occupation



Narrative Trajectories

Wayne

Wayne Wong during his time serving in the Signal Corps



Image Annotation

BUILT AND NATURAL ENVIRONMENTS



WAYNE



FACES



CLOTHING



OCCUPATION



Processing

Annotation

Once categories were finalized, we assigned a color to each, e.g. purple for clothing, yellow for occupation. We then annotated each image. After images were annotated, they were categorized into narrative super-categories based on annotation content, to then be used for pathing

Classification

After images were annotated, they were categorized into narrative super-categories based on annotation content, to then be used for pathing



Pathing Guidelines

Major transition points occur at “hero images”. These hero images were of most interest to our research participants, and have 3+ annotation categories so as to facilitate narrative branching.

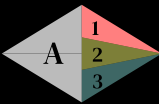
User’s dwelling gaze at “hero image” nodes trigger narrative pathways aligned with the five super-categories, with unique music and narration cues associated with each path. Decisions at these hero images control the overall direction of the story.

Narrative pathways contain further moments of branching that add diversity to the audience’s experience, but don’t alter the story’s narration or music. These branches contain images from the same super-category as the selected narrative pathway, but have content from other categories

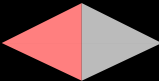
Images are carefully selected such that they guarantee a return to the main path after periods of branching.



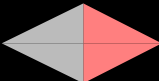
Sample Network



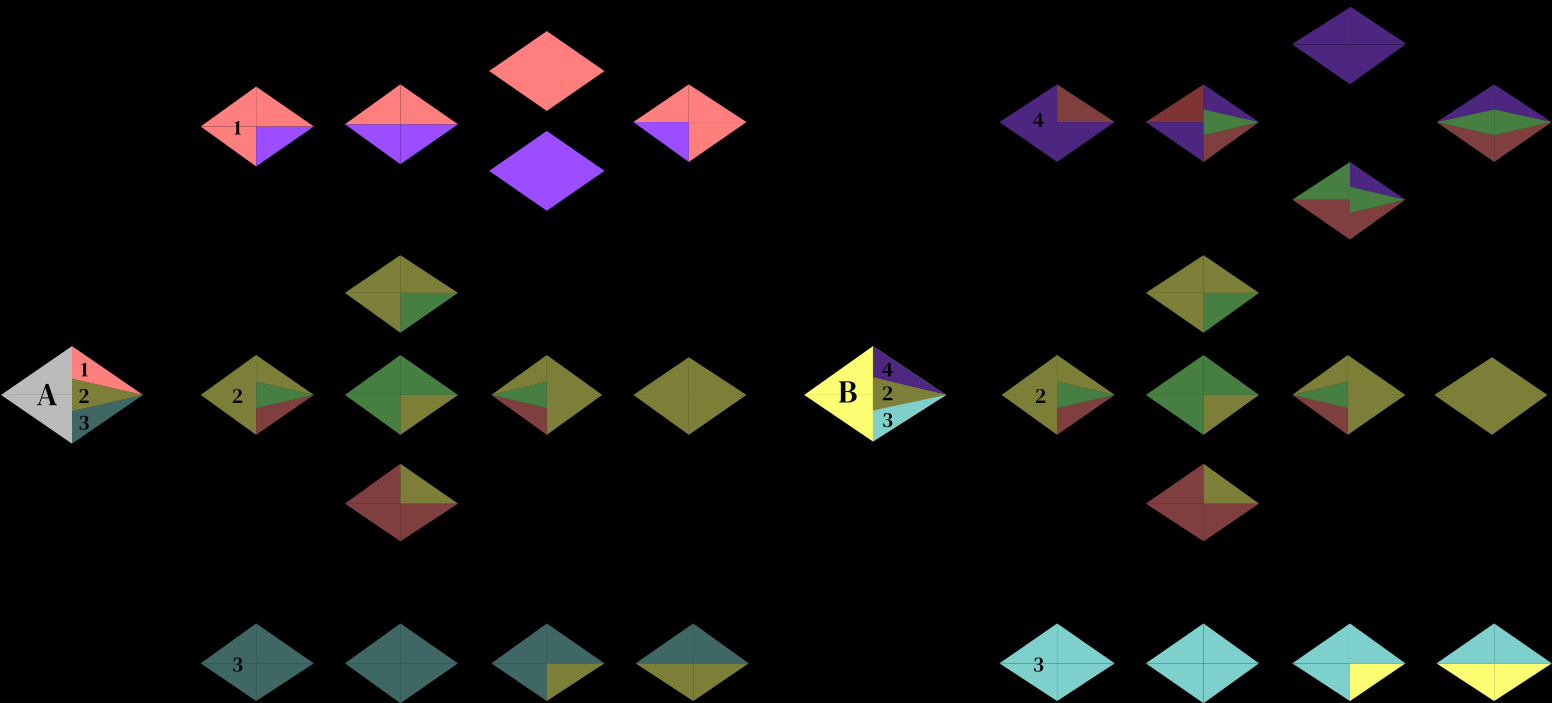
Denotes Hero Image



Indicates categories that led to activation of an image



Indicates categories contained in an image



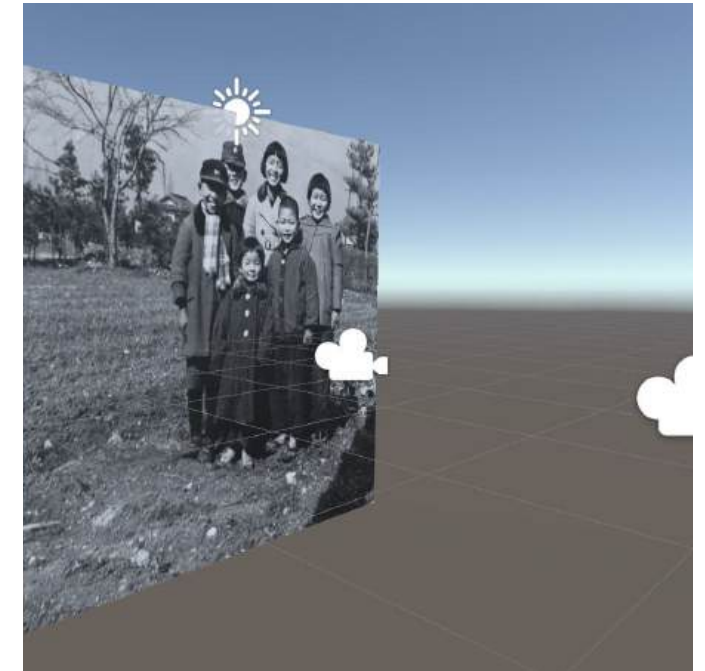
Tech Stack

Unity

For the immersed viewer in the Portola Obscura, Unity was used to visualize Wayne's images in 3D, program the paths using hidden buttons aligned with our annotations, and send gyroscope data to TouchDesigner.

TouchDesigner

TouchDesigner was used to create our final visualizations for the audience view. First rendering a custom cursor that responds to mouse input, we then extracted x and y coordinates from Unity's gyroscope data, processed it using Python and C# scripting, and mapped it to control the position of the cursor directly. Once the cursor is rendered, we feed live video in from Unity, layer them using texture operators, and project it to the audience view.



Storyboards

- I. The Introduction
- II. The Layout
- III. Portola Obscura
- IIII. The Camera
- V. The audience
- VI. Photostrip



Introduction

The guests view the introduction of the Obscura exhibit and decide to enter through the curtains.

Location

The introduction is printed on the left side of the curtains, while the heat map is on a visual display on the right side.

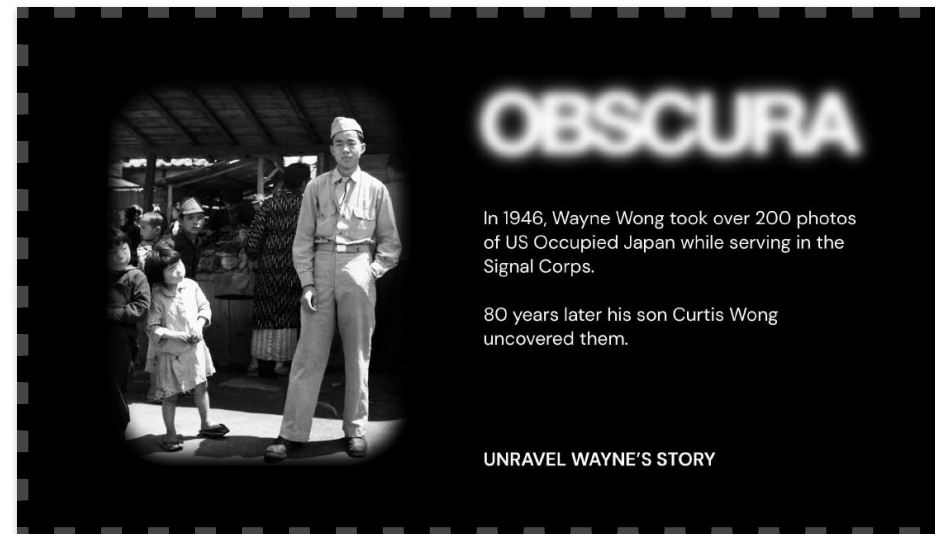
Dimensions

Introduction

3ft x 3ft

Heat map

3ft x 2ft



Layout

The guests enter the Obscura and choose to view the projection or enter the Portola Obscura.

Description

The Obscura is a large, dark room with the only form of light being from a large projection of photographs onto the back wall. In front of the projection wall, there are two aisles of three benches in each.

Dimensions

The Forum

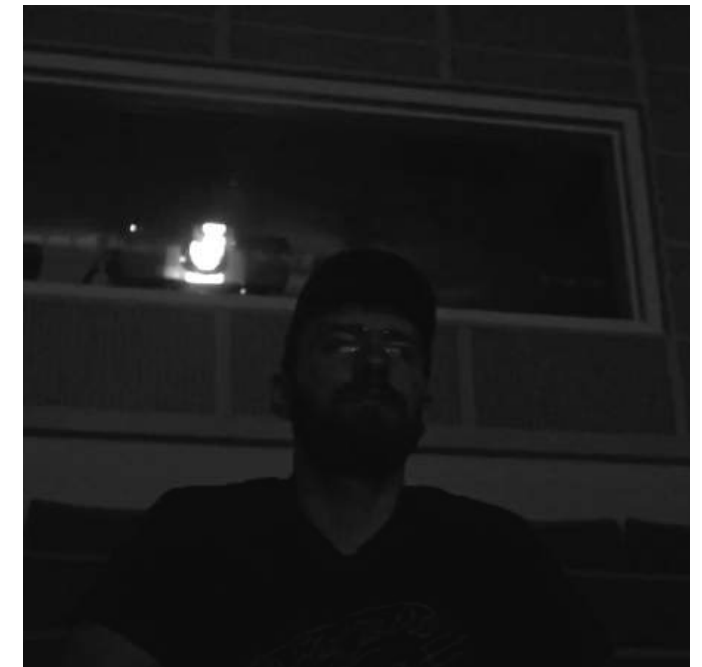
30ft x 70ft

Large Projection

11.5ft x 26ft

Benches

5ft x 2ft 3ft



Portola Obscura

One guest enters the Portola Obscura, picks up the camera, and looks through the lens

Description

The Portola Obscura, a black booth structure, can be opened by separating the two curtains, creating an opening to enter. Inside the booth is a black stand, with a VR Camera resting on top. On the roof of the booth is a light that creates a direct spotlight onto the camera.

Dimensions

Portola Obscura

3ft x 3ft x 10ft

Camera Stand

1ft x 1ft x 3ft



VR Camera

The guest views Wayne's photos through the camera.

Description

The camera replicates the Leica Camera that Wayne Wong used in 1946. This "camera" is an eye-tracking VR headset enclosed in a 3D printed exterior of Wayne's Camera. Therefore, instead of viewing a headset through two lenses, they will be viewing the camera through a single lens.



The Audience

The other guest views
Wayne's photos on the
projection

Description

The audience will view the photographs along
with the gaze bubble which follows the gaze of
the person inside the Portola Obscura



Photostrip

The Portola Obscura user receives a celluloid print of 5 images from the narrative path(s) they experienced

Description

Visitors receive a souvenir of their unique experience with the Obscura and Wayne's images. The images they receive serve as a representation of their journey as they experienced Wayne's journey and created one of their own.



The Reticle

The reticle serves as a signifier for the viewer's gaze as they navigate through the images.

Functionality

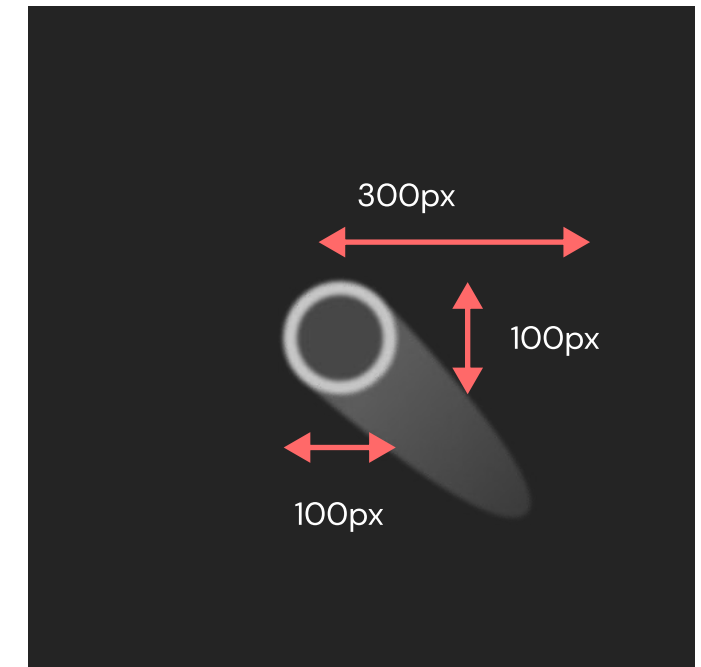
Selection: Within a 5 second window, the system uses the reticle to detect which zone has been looked at the longest to trigger a transition.

Movement: The reticle moves according to the VR Camera's gyroscopic data as the viewer looks around the image. If the viewer's gaze goes off the image, then the reticle remains on the image and positioned closest to the viewer's gaze off screen.

Visual Style

Color: The reticle is transparent and should not obscure the images significantly, while still being visible.

Trail: A trail follows the reticle as it moves around to emphasize the movement of the viewer's gaze.



Width: 100px
Height: 100px
Trail length: 100px
Colour: D9D9D9
Opacity: 20%

VR Image View

Images in Virtual Reality are unedited and presented at a large size.

Functionality

Zones: Images can have between 1 and 5 zones, manually added onto the images depending on the themes they contain. These zones dictate the next series of images and narrative triggers.

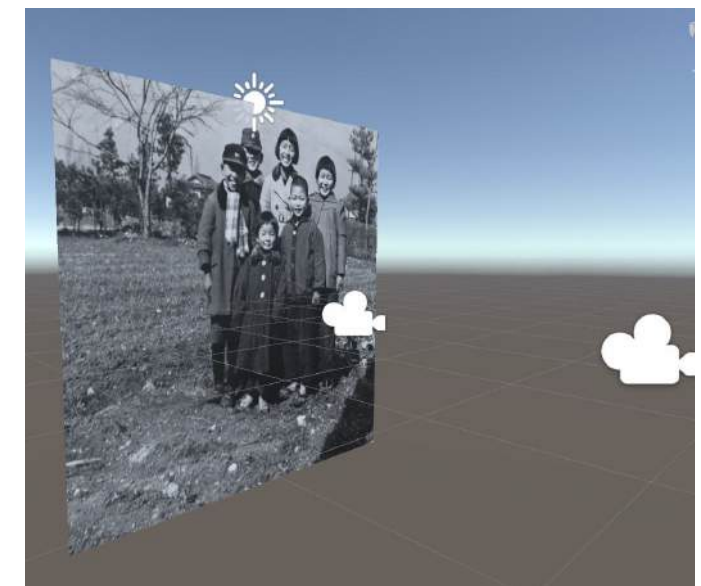
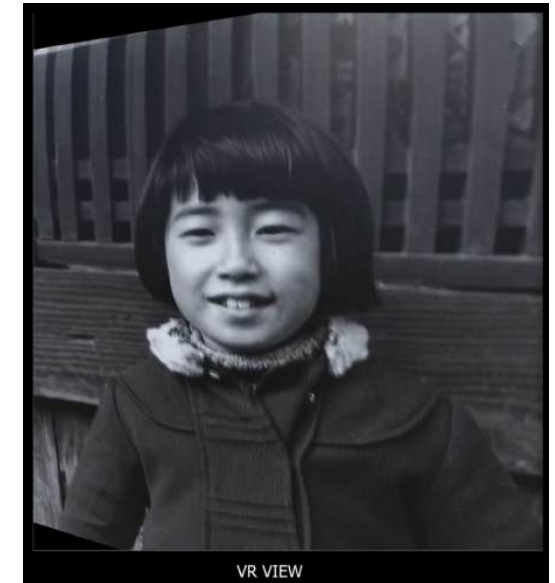
Duration: Each image is displayed for 5 seconds, whichever zone is looked at for the longest within that time frame is selected.

Movement: The images do not move, as they are kept at a static position of 5ft from the viewer. The viewer is free to move their head in any direction in VR.

Visual Style

Size: The images are sized at 600h max height (Unity) with unlimited width and aspect ratios are to be maintained across all images. This size makes the images just a little taller than the average viewer and enables them to move their head around to inspect the image in detail.

Background: The background is always black.



Typography

While the experience does not feature any text, the logo and posters follow our type style.

Display / Logo – Helvetica Bold 64px

H1 – Helvetica 48px

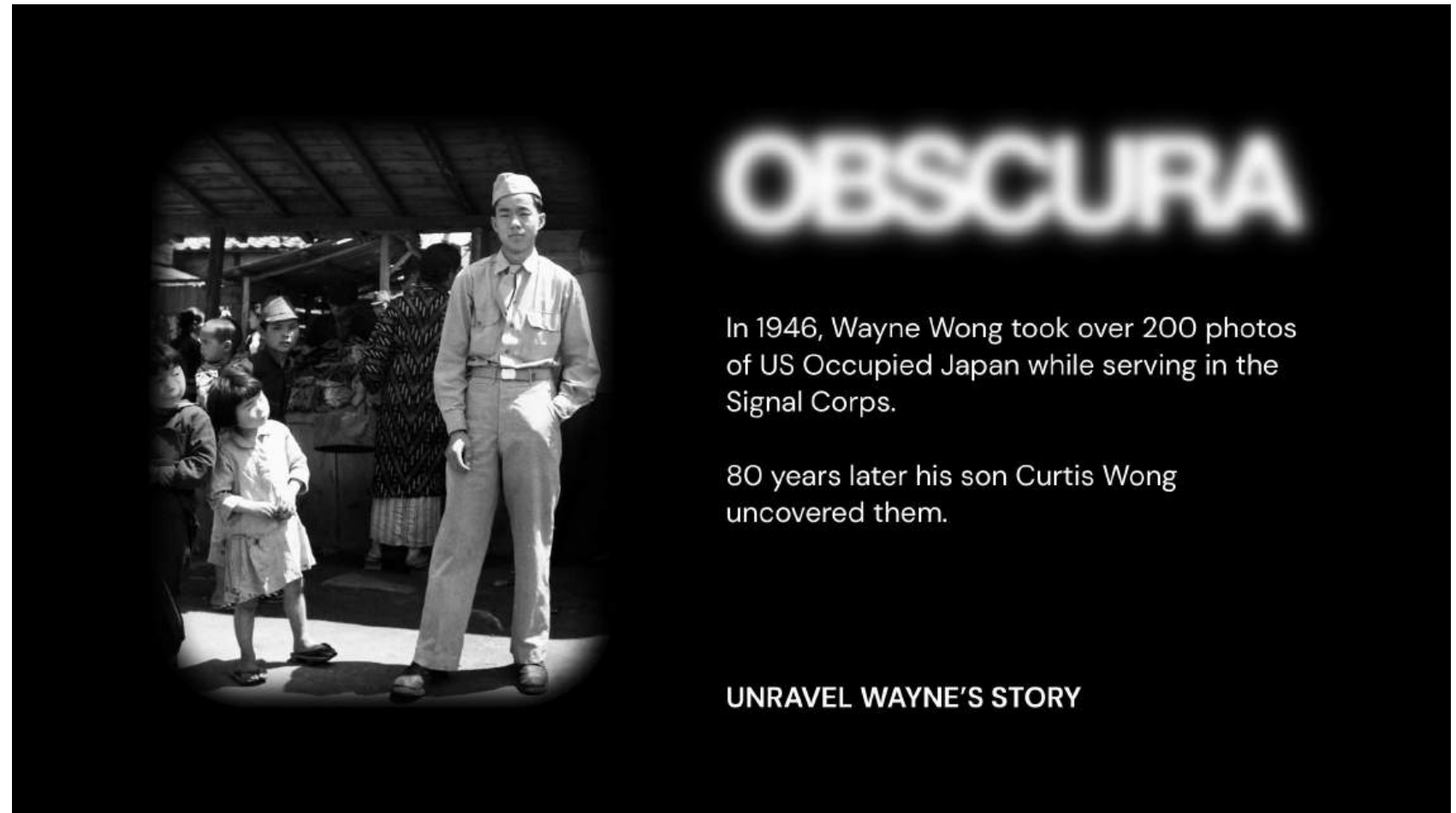
H2 – Helvetica 40px

Body – DM Sans 24px



Poster Design

Positioned to the left of the Obscura entrance, the poster serves as a brief introduction to Wayne and Curtis Wong's story, providing enough context to get them to experience the Obscura.



Eye Tracker Screen

The eye tracker screen is positioned on the right side of the Obscura entrance, and it serves as a representation of a collection people's journeys as they experienced the images.

Functionality

Cursor Position: The cursor position represents where the viewer was looking in the image.

Cursor Size: The size of the cursor is determined by how long the viewer's gaze was positioned on that part of the image.

Cursor Color: The red cursor represents the active gaze point of the viewer.

Line: The line connects one cursor to the next point where the user pointed their gaze.



Photostrip

After the viewer inside of the Portola Obscura finishes experiencing Wayne's photos, receive a printed photo strip. This photo strip includes 5 photos from the path they went through, and serves as a souvenir and talking point for the experience.

Functionality

Image Selection: The system keeps track of which path the viewer experiences, and prints 5 photos from the full path they experience.

Printing: The photo strip is printed only when the viewer has experienced at least 1 full path, and printed after the viewer has placed the camera back down.

Material: The photo strip is printed on celluloid film



Inspiration

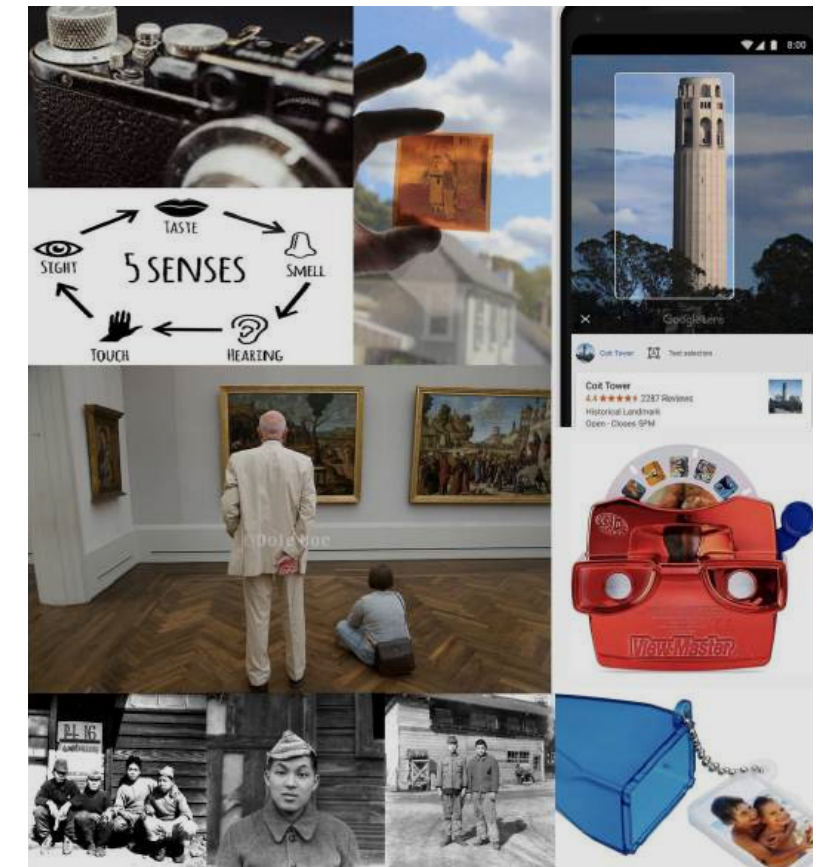
Guiding Adjectives

At the beginning of our design process, we aligned on five adjectives we hoped our final design would exemplify:

- Introspective
- Connected
- Reflective
- Transient
- Enduring

Moodboarding

Building on these adjectives, we sourced images from Wayne's collection and the internet as a more concrete north star.



Development and Downselection

80 Ideas

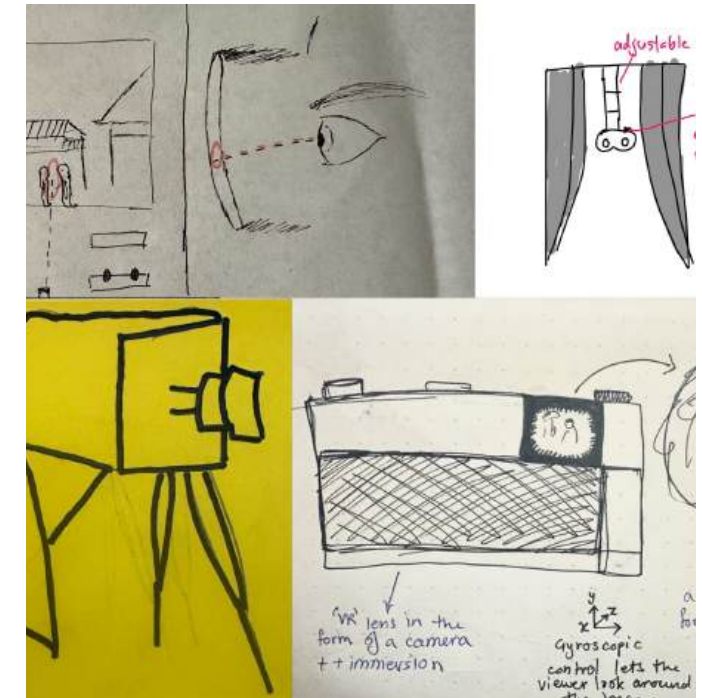
Based on our adjective and moodboarding exercise, each group member generated 20 ideas, and presented each of them during an extended meeting.

Categorization

Ideas were sorted into different design direction categories, e.g. photography, context, history, technology. From this categorization, we combined ideas given overlapping conceptual content, and discussed from there.

Creation

Heavily leaning on Wayne and Curtis' story, our research, and our team goals, we put together an experience that honored all three.



Prototyping

Camera

Created form prototypes to understand the experience of using a camera as a VR device, and tested feasibility with a Google Cardboard



Booth

Roughly prototyped multiple Portola Obscura setups to understand the experience of entering an immersive zone with just the viewer and the camera

Virtual Reality

Prototyping image viewing experiences using Virtual Reality headsets and Unity



Impact

Equity

Given the potentially sensitive nature of Wayne's photos and their depiction of post-war Japan, our team made a concerted effort to center voices of the Japanese community in Seattle and beyond during both our research and design phases. This is reflected throughout Obscura, with particularly emphasis in the content of our narrative pathways. Further, we hope Obscura is able to shine a light on a period in history many in the United States may be unfamiliar with, and foster care and empathy for those currently enduring conflict and the damages wrought thereafter.

Environment

Obscura is generally environmentally neutral, aside from the one-time production costs of the portola obscura. The paths and annotations are manually curated, with no machine learning albums and expensive training required. As a result, nothing more than electricity is required to continue it's display.

