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Kilroy Was Never Here: An AR Mystery Game

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Kilroy Was Never Here:
An AR Mystery Game

By

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Fine Arts in Visual Communication Design

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Associate Professor, Visual Communication Design

Abstract

Kilroy Was Never Here is an augmented reality mystery game which uses design to influence urban exploration. It uses storytelling to enhance engagement with an environment, and generates an immersive experience for the user. It invokes a variety of methodologies, most notably discovery, transformation, and engagement. An alternate reality is generated through colored filters, motion graphics, and moving typography which both informs the user of the story and guides them through their environment. Discovery encompasses both clues and new locations for the user to visit as they unravel the mystery of the disappearance of the main character, Kilroy. Clues transform the space the user is viewing, and offer them a new understanding of their surroundings, considering how certain spaces may take on new nuances with the occurrence of meaningful events. There are three different clue types: locks, keys and freebies. Keys are clues which become integral to unlocking further gameplay when paired with the appropriate lock clues. Lock clues will then disseminate information to the user about the plot, and often will point the user to one or more new locations to investigate. Freebies are clues which do not require any input from the user beyond viewing the space through the lens of the application. The immersive aspects of the gameplay further dramatize the storyline by bringing narrative elements closer to the user's reality.

Keywords

Augmented reality, design, mystery, narrative, game

Between a fondness for non-linear storytelling, adventures involving agency, map-based narratives, and a thesis requesting innovation through design, I formulated my initial problem: how might we use storytelling and design to enhance engagement with an environment? Through a long process of designing and rethinking and redoing and redesigning, I ended up with a project that is best described as an AR horror mystery game, titled *Kilroy Was Never Here*. The three main facets of the game are discovery, transformation, and engagement.

The story of *Kilroy Was Never Here*, a mobile application with the intention of novelty and entertainment, is discovered by the player using three main interfaces: AR, map, and inventory. In the narrative of the game, Kilroy is your friend who suddenly disappeared and has been missing for a few weeks. AR is where the player does the bulk of the gameplay, scanning their immediate surroundings for clues and other artifacts, moving beings, or text, which provide context and insight to Kilroy's disappearance. You explore this mysterious and unfamiliar world seeded within your own physical world, narratives spilling out over rooms you've sat in, stairs you've already descended, sidewalks you've crossed dozens of times without a thought. This other world is crawling with frantic handwritten messages from Kilroy which populate the environment like graffiti, slithering beings (worms? snakes? demons?) and bits and pieces of found information, like newspaper articles spanning entire walls, which blur the lines between your environment and the game itself, like giant chess pieces towering beside you. There are opportunities to engage with minigames directly surrounding you, and opportunities to trigger events from artifacts which only appear in the lens of the game. The clues and other messages within the game take the form of warping motion graphics which change over time and with their proximity to you, creating corners you may not want to peer around anymore.

The inspiration for the engagement within the game came from largely from three games: *PokemonGo*, the location-based mobile game with AR capabilities, *MOTAS: The Mystery of Time And Space*, an escape-room style web game from the early 2000s (which has since been archived and is no longer directly accessible) and *Unsolved Case Files*, a series of board games containing documents the players must sift through like detectives. *Kilroy Was Never Here* was born from combining the ideas of piecing together a narrative from found clues, solving small puzzles and riddles in order to progress in the game, and urban exploration supplemented with AR as gameplay, to create a new kind of horror game which fits snugly into the reality of our mobile-driven society. The title references iconic graffiti from WWII depicting a face and the words "Kilroy Was Here", and gestures toward the player discovering where Kilroy was and was not in the time leading up to his disappearance.

There are three types of clues within the game, locks, keys, and freebies. Locks are clues which contain information about the narrative, but that information may only be accessed if paired with the corresponding key. Key clues, therefore, are clues which are seemingly meaningless or nonsensical by themselves, but when paired with lock clues as passcodes, identified symbols, etc. they unlock that previously hidden information. The necessity of pairing clues together creates more complex and difficult gameplay, and requires more exploration and consideration from the player. Freebies are clues which appear in the game's environment, without any need for the player to uncover or otherwise bring them to visibility. The clues are designed to be decorative elements, creating an immersive experience for the player as they navigate unfamiliar and unsettling additions to familiar landscapes. Some of the graphics are in constant flux of motion, generating the sensation that your environment itself is some living, breathing horrific beast, while the motion and transformation of others are triggered by proximity, creating a sense of anticipation and fear. The clues are decoration, but they are alive, and alongside creating an aesthetic atmosphere they serve to provide information and deepen the worldbuilding at hand.

In considering the player and when they might be playing, I imagined the time between classes on a college campus, the time between work and an appointment in an urban area, the time in which you are waiting for a friend to meet you at a coffee shop. *Kilroy Was Never Here* is a game which is designed in short snippets, in order to allow the player to find a single clue at a time within a matter of minutes, if that is the duration of time they have to commit. The inventory is designed to remind the player of the

context in which they discovered the clue, displaying metadata about the date, time and coordinates of discovery, so they may put down the game for a week or longer at a time and be able to pick the story back up with relative ease. The lack of social media connectivity or larger network communication resolves the game to be structured for independent gameplay and isolates the player, a meta element that brings them closer to the narrative of the lonely, lost, and missing Kilroy.

The details of the design decisions were nuances that had the ability to amplify the core feeling of the game, but required consideration of practicality and clear communication, ease of understanding from the user. Designing the icons presented questions of stronger connotations of certain forms with unintended meanings, such as a magnifying glass clearly representing a clue in the context of a *Carmen SanDiego* CD-ROM computer game, but more obviously signifying 'search' in the context of a mobile application interface. Some design decisions were directed simultaneously by practicality and aesthetic streamlining, such as omitting titles from the inventory page, as naming conventions posed an unnecessary issue and would visually clutter the screen, inhibiting the user from scrolling through a large grid of information with ease. Other design decisions were made from time and resource scarcity, such as a 3D figure I had made 6 variations of before omitting entirely from the project. The figure required significant amounts of time to render from Cinema4D, and compositing the renders to integrate smoothly with the footage and filter in Adobe AfterEffects proved too problematic to spend the time on. The visual research into what features placed a figure in the uncanny valley may not have been able to come to fruition in the form of a not-quite-human figure lurking at the end of a hallway and reaching it's backwards bent fingers out towards the player in a jump-scare moment, but the research was still valuable in directing the placement and behavior of other graphics throughout the environment. One of the more difficult aspects of the game to design was the interaction indication, which would appear in relation to an artifact in the game that was entirely augmented and not at all related to the existing environment. The indication had to contrast enough with the object and environment that it was an obviously new addition to the gameplay experience, but couldn't contrast so much that it became visually disintegrated with the rest of the aesthetic. It could not be too cheesy (as an array of AfterEffects Particular tentacles proved to be), whimsical (as a ring of turbulent Insydium X-Particles proved to be), or distracting (as a full screen transition effect proved to be), but had to obviously lure the player into tapping on the artifact. A spiral appearing overtop the object became my answer to this design decision, which integrated well with the other spirals that had snuck their way into the game as location marker icons, decorative elements of the AR environment, and mental journey that Kilroy seemed to be going down.

Designing the map also required much time and attention, with vastly different iterations preceding a final style. The first variation of the map was inspired by the assertion of a notable professor that isometric was the way to go, and the maps that appear in the beginnings of fantasy novel series to contextualize the world into which the reader is about to plunge. The 2D perspective was too flat to feel truly immersive, and was resultantly confusing to navigate and relate to direct surroundings. A second version of the map sported a ghost avatar, which was intentionally androgynous and could be identified with any player, fit the spooky theme of the game, but didn't quite make sense in context of how the player related themselves to the environment of the game. The player was intended to feel as though they themselves were peering into an alternate dimension of their reality, not an entirely separate figure existing within the scope of the game. The third version of the map took notable design moments from the AR portion of the game, dipped in red with larger than life typography sprawling the landscape, and it's 'avatar' was nothing more than an arrow, which functioned to succinctly inform the player of their location, as well as further the ambiguity of the player's place in the world.

What I originally anticipated in designing *Kilroy Was Never Here* was a geocaching narrative adventure, utilizing QR codes and video reels. Instead, the resulting project stepped even deeper in integrating the virtual and physical worlds, tying the fictional narrative to reality through AR typography which bled and embedded itself directly into the surrounding landscape, offering a new (and quite red)

perspective into spaces players had presumably seen before, but never before as they appeared in Kilroy's world.

Appendix A

Appendix B

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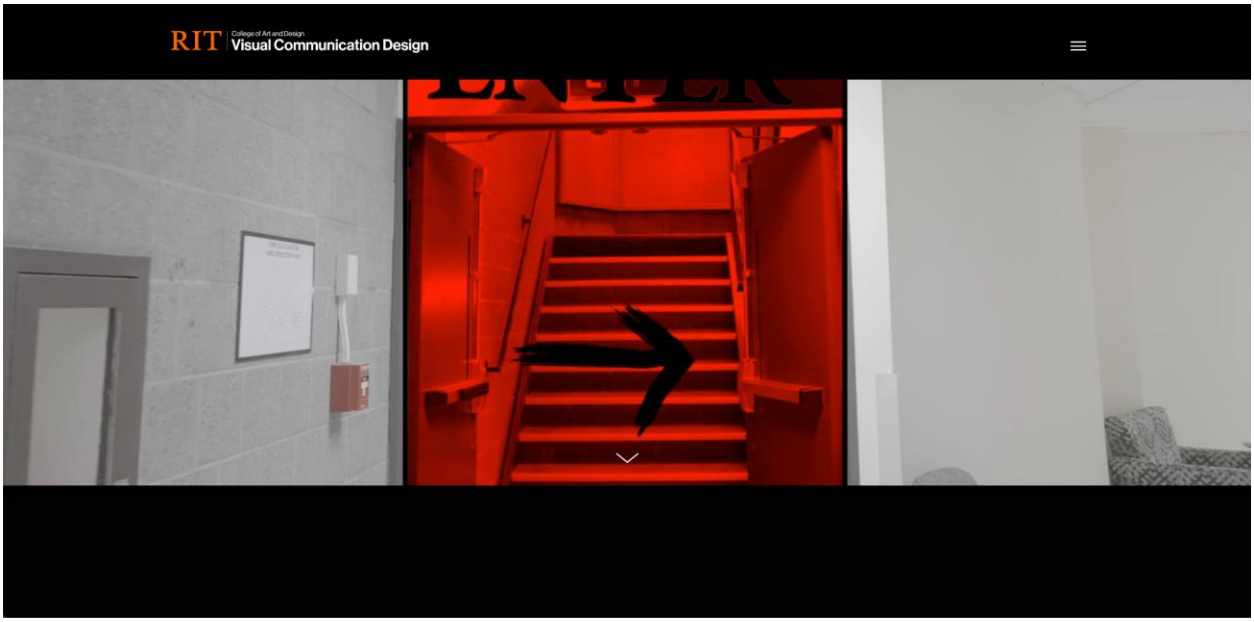
Appendix C



Prompt

How might we use design to influence urban exploration?

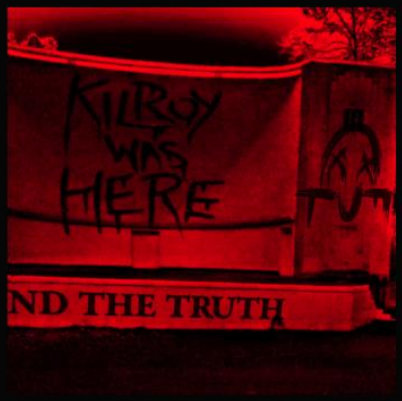
Problem

How might we use storytelling to enhance engagement with an environment?

Solution

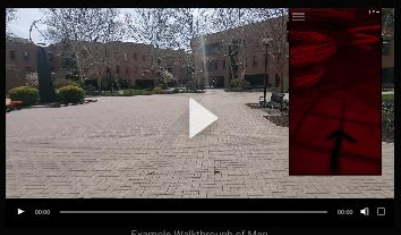
AR Mystery game: A user explores a cityscape through the lense of virtual storytelling, enhanced with **discovery**, **transformation**, and **engagement**.

AR stands for augmented reality, which is the integration of the real world with digital assets. In this project, AR takes the form of a mobile application, in which reality is viewed through the phone's camera, and augmented by a colored filter and motion graphics.



FIND OUT WHERE KILROY WAS WHEN HE DISAPPEARED

WAS KILROY MURDERED... OR WAS HE TAKEN SOMEWHERE ELSE?



Example Walkthrough of Map

Discovery

Discovery is a two-fold sentiment in this game - discovering new **locations**, as well as **clues** about Kilroy's disappearance.

A nuance to this feature is that the user may uncover new clues or opportunities for engagement in a location only on a repeat visitation, or after triggering a certain event elsewhere in the game.

Clues

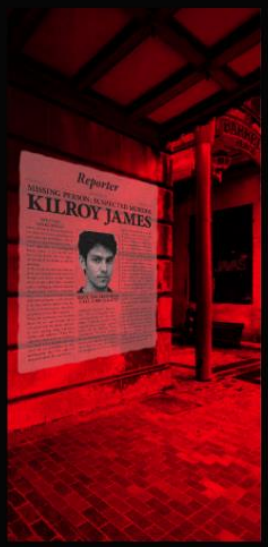
There are three types of clues - **locks, keys, and freebies.**

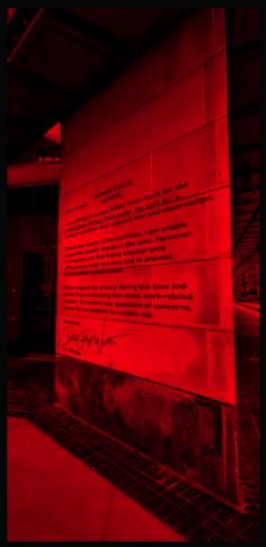
Locks are clues which may only be revealed if there is a specific input from the user, whether that is a code, pattern, or some other format.

The input required to reveal the information from a lock clue comes from a **key** clue.

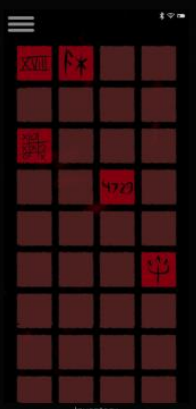
Locks and keys are found in different locations, and it is up to the user to figure out which ones go together.

Freebies are clues which simply appear in the environment without any input necessary from the user, such as the images shown to the right.





Example of a Lock Clue

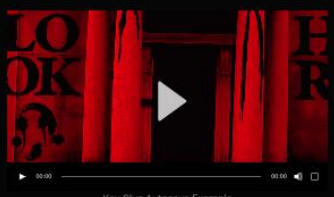

Inventory

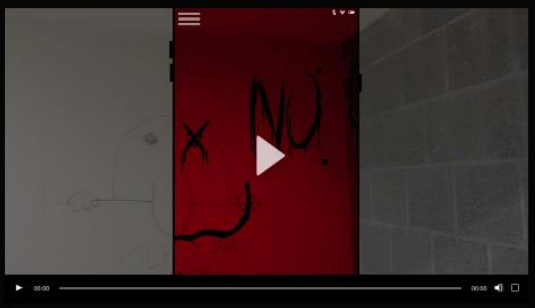
Key Clue accessed from Inventory

Inventory

Key clues are kept in the user's inventory, and can be accessed at any time. Any key clue that comes into the user's field of view is automatically saved to the inventory.


Lock Clue & Inventory Walkthrough


Key Clue Autosave Example



Transformation

Through the use of augmented reality, the environment of the user is completely transformed.

Using a red filter, moving typography which seems almost alive, and warping graphics, the user encounters their surroundings with a new **lense** of **living, breathing horror**.

The intention is to further dramatize the creepy elements by bringing them closer to the user's reality, creating an **immersive experience**.

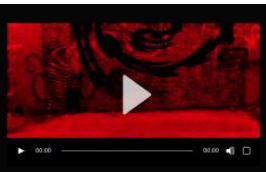
Typography

There are two types of typography present in guiding the user through the transformed environment - **guiding type** and **narrative type**.

The **guiding type** serves to help the user **navigate** toward certain places within their environment, and is set in Garamond. The words deform in a heartbeat pattern to **entice** the user.

The **narrative type** functions to tell the user more about the plot and can often be seen dripping or distorting in some other fashion.

Guiding Type Example



Narrative Type Example

Engagement

There are three main modes of engagement - the **order** in which the user chooses to unravel the story's content, **interactivity** with elements in the game, and **piecing together** lock-and-key clues.

PROCESS

Initial Ideation

Before things got spooky, this was the plan:

A **geocaching adventure** in which the user follows a map, or explores independently to discover locations which present QR codes. The QR codes will link to **motion graphic reels** that each contribute to a **larger narrative**. The reels would be relevant to the specific location.

The video to the right was the first example sketch I came up with for the project, just to see what it would look like to place text and images into an environment.

3D vs 2D Animation

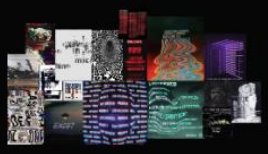
Next up was a quick experiment to test out what a 'something is here' indicator could look like, rendered out with 3D (using **Cinema4D**) versus 2D animation (using **Adobe AfterEffects**).

2D animation seemed to be the winner, but that didn't stop me from continuing to experiment with 3D renders later in the process.

Moodboards

For the visual style & aesthetic direction, my first thoughts were to go with either a **glitchy** feel, or a more **sketchy** direction which played with depth.

I referenced the scribble moodboard when I started developing my first version of the map.



Typeface Exploration: Guiding

I first began exploring typefaces to use to help guide the user along their path. Considerations included **legibility**, **boldness**, and **excitement**.

Let's Get Spooky

After creating my next moodboard with a more typographic focused direction, I began working on my next video sketch which was focused on using only type in the environment. The word I chose to place was 'Closer', at first for the sake of guiding the user, but the more I looked at what I was doing, the more it felt natural to head in a **creepy / horror aesthetic direction**.

I was thinking about how to bring more **drama** to the video, and in contemplating where I had seen drama working well in other media, I decided that saturating the environment in **red** would add an **extra layer of intrigue**.

Typeface Exploration: Narrative

In earlier phases of the project, I thought that I would use a separate typeface to showcase narrative moments in the game. I ended up choosing Heisei Kaku Gothic, with a mixed alphabet. I used weight W7 for vowels and weight W9 for consonants, to add some **variety** and a layer of **creepiness**.

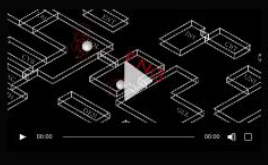
Narrative Typeface Testing

As I began to integrate the narrative typography into my videos, it became apparent that there was **not enough clear distinction** between the guiding and narrative type. I decided to solve this issue by returning to the concept of **handwritten type design**, this time using my actual handwriting instead of a handwritten style of typeface.

The distinction was much more clear and brought in the sketchy creepy vibe I was going for, without the issue of too much consistency and computerized appearance of many handwritten style typefaces.

Type Animation Exploration

I continued to experiment with different ways to treat the typography within the scene. At first I felt inclined towards switching the type out for a brief moment with a **handwritten style** of typeface, and then switched directions toward **distorting** the type. My best of the distortion patterns were **breathing** and **heartbeat** style, with heartbeat being the winner.



Map Version 1

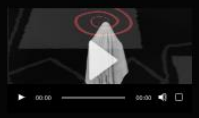
My first version of the map referenced my scribble moodboard, as previously mentioned, and was developed when I was still considering using the flashing **alternating typeface** style within the project.

I started developing the map before I had honed in on the **visual direction** for the AR sequences, and therefore could use a **refresh** in order to better integrate with other aspects of the game.

Map Visual Research

I did some research on how other **location-based AR games** were treating their maps before beginning my next iteration.

Visuals are from the following games (in order): PokemonGo, Orna: A Geo RPG, Pikmin Bloom, Ingress Prime, Zombies Run! 11, Jurassic World Alive, and Five Nights at Freddy's AR.



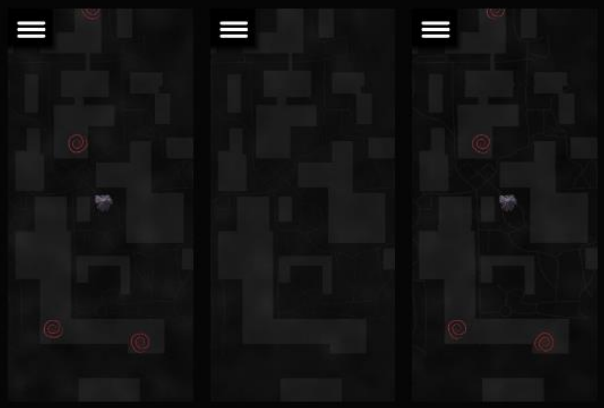
Map Version 2

After some visual research on how maps were treated in other AR games, I decided to try out a 3D animated map sequence using Cinema4D. I thought of making the **avatar** a **ghost** to go with the **spooky theme**, but it didn't quite fit thematically, and so I ended up discarding the idea.

This iteration felt closer to matching the style of the AR sequences, but not quite there yet.

Transition Exploration

I tested out a large variety of transition sequence ideas, for loading in a different part of the app, with these being the top three. I ended up going with the **VHS style**, as it seemed to be the most fitting for the aesthetic.



Map Version 3

In order to better **integrate** the map with the other visuals I had been creating, I decided it was necessary to base the map in red and incorporate **typography** into the design.

Some considerations throughout this process were the **hierarchy** levels of the type background element, buildings, paths, and arrow icon.

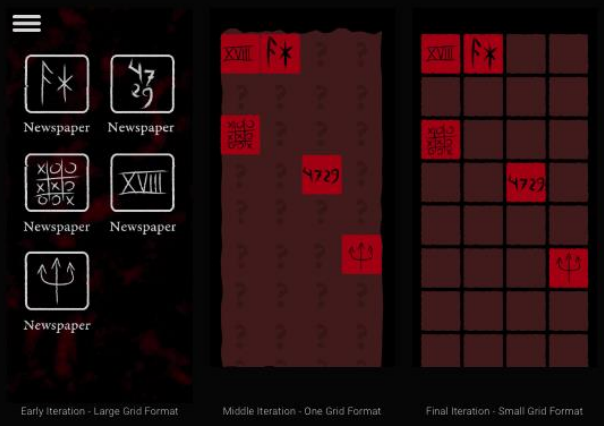
None of these images ended up as the final map design, but were necessary iterations before finalizing the design.

Finalized Map

In my final iteration of the map, I jumbled the text, so it would still be a **consistent element** across the project, without being a **distraction** for the user.

Spirals are also a consistent element, existing as location markers in the map, and as visual elements in the AR sequences. The spiral **changes appearance** when the user comes within a certain level of **proximity** with it, to indicate that there are visible AR elements nearby.

Bird's-Eye View | Point of View | POV - Location Nearby



Early Iteration - Large Grid Format | Middle Iteration - One Grid Format | Final Iteration - Small Grid Format

Inventory Grid

I iterated many times on the Inventory, and again faced similar questions as with the map: how to best **integrate** the **visual style** with the AR sequences and Map design.

I determined a **smaller grid** made more sense for **ease of searching** inventory items. The question marks seemed an unnecessary visual element, with a difference in opacity of each item being enough to showcase which items had been found.

I initially thought to name each inventory item, but naming conventions posed an issue and I determined that the visuals spoke well enough on their own.

Inventory Item

In considering what information was necessary to include for each item in the inventory, I first determined the **location** where it was discovered was most important.

I determined that the **date** the inventory item was first discovered would be helpful for jogging the memory of the user as to the **context** of the discovery.

Lastly, I deemed it necessary to note **how many times** the location was visited, to account for a nuance of the game in which some clues may **only appear** on a **repeat visit**.

Early Iteration - Graphic + Image

Middle Iteration - Image as Graphic + Description

Final Iteration - Improved Spacing & Scaling

AR Mode

Inventory

Map

Icons

Some of the considerations for icons were **rounded vs pointed** edges and corners, including **dimensional depth** or not, and level of **stylization**.

The Inventory icon was the hardest to design, as many options were either unclear or could be mistaken for something else.

Interaction Indication

Creating a visual cue that the phone / rotary could be interacted with proved to be quite a challenge. I experimented with quite a few different methods, including Adobe AfterEffects **Particular** and Cinema4D **Insydium XParticles**.

None of the iterations shown ended up as the final method, but the **final solution** was **derived** from the first gif shown to the left.

Adobe AfterEffects Motion Graphics

Cinema4D Insydium X-Particles

Adobe AfterEffects Particular

3D Figure Exploration

In an early version of one of the AR sequences, I had an **ominous figure** waiting for the user at the end of a narrow hall. The stick figure model was a stand-in, but served to envision **jump scare possibilities**.

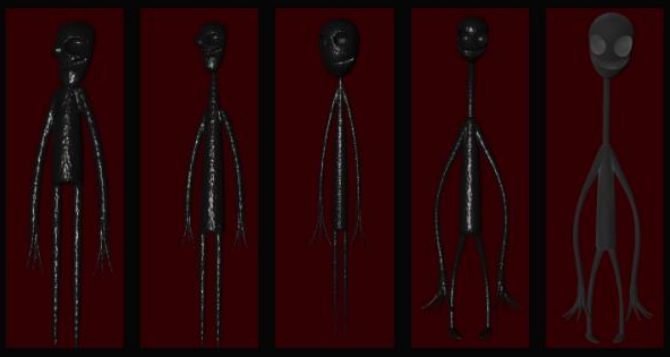
3D Figure Moodboard

In attempting to understand what **visual features** placed a figure in the **uncanny valley**, I made the most terrifying moodboard I have ever created.

3D Figure Iteration

I iterated upon the design of the ambiguous, ominous figure many times. I felt I was successful in modeling something you would not want to approach if you saw it at the end of a long, narrow hallway.

Giving the figure **unnatural proportions**, a **looming head** and backwards bending fingers seemed to fit the creepy factor I was pursuing.



Scare Test

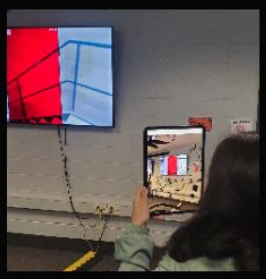
While the figure was certainly creepy, looming at the end of the hallway, **compositing** and **rendering** posed **many issues**. The figure did not integrate well enough with the footage, and **did not contribute enough** purpose to the game to continue pushing in that direction.

Generating the content was fun, but it was **valuable to understand** when it was **time to let go** of an aspect of the project that was simply not working.

Imagine RIT Presentation

I presented this project at Imagine RIT 2023. I had a large TV screen playing all of my videos on a loop, and a computer displaying this website.

Much to my delight, many of the **visitors were very excited** and were inquiring if the game would be **available for play** any time soon.



AR Simulation

To add a level of **engagement** and **interactivity** to my project display at Imagine RIT, I set up Adobe Aero to **project graphics** from the game **onto the walls**, ceiling and floor near my exhibit.

Some limitations of the software were that I could not apply a red filter, or include gifs, so all of the images were static. For these reasons, it was not a completely accurate simulation of what the game would look like if played. Despite this, it was really fun and **fascinating** for the **users to engage with**, especially for children and those who had not used AR before.

THANKS FOR COMING

YOU'LL NEVER ESCAPE

Visual Communication Design MFA

Communication
Interaction
Motion & 3D
Design Studies

About the Program