

Riley's Room – Narrative Environment Art

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Abstract

Videogames have the ability to place their audience in environments like few other artistic mediums can. The ability to freely move and look around a space immerses a player in a world, and can be effectively used to tell a story, express a mood, or simply show a level of technical skill. Games such as the *Life is Strange* series, *Dear Esther*, and *Mýrdalssandur, Iceland* show a recent rise in games that de-emphasize gameplay and interaction in favor of experiencing detailed environments. In lieu of vast landscapes or cityscapes, games like these strive to express their worlds in limited, small environments.

Riley's Room is a piece of narrative environment art, realized as a 3D computer game. Implemented in Unity3D, it loosely tells a story of a young adult named Riley. *Riley's Room* looks to explore the parallels between the night before leaving for college, and the day after returning in a following summer. The primary objective of *Riley's Room* is to immerse its player in these two states and attempt to reflect the feeling of being there. All 2D and 3D assets, code and implementation, as well as audio are created from scratch with a focus on quality over quantity. All aspects of *Riley's Room* adhere to and serve a central narrative. Software such as Blender, Photoshop, Paint.net, GIMP, and Ableton were used for all parts of development.

1. Introduction

In this project, titled *Riley's Room* I plan to develop narrative environment art, with the objective to immerse the player in detailed environments and express a narrative about departing for and returning from college. *Riley's Room* will be implemented as two detailed 3D environments, specifically bedrooms in the Unity3D game engine. One scene will reflect our main character's bedroom the night before the day leaving for college, and the other will depict the bedroom after the character has returned home for the following summer. The player will be able to free walk and look around these scenes, playing as Riley. The term "environment art" is used to reflect the lack of gameplay/interaction, with more emphasis on the fidelity of the environment. All assets, from meshes to textures, to audio, to gameplay scripts will be created from scratch. 3D assets will be modeled with precision reflecting realistic scale, and textures are planned to be hand painted and applied to UV unwrapped and marked meshes.

The motivations behind *Riley's Room* are the desire to express a unique narrative and feeling felt by many college students including myself, create a set of detailed 3D environments

employing a broad skillset, and create a game/project from top to bottom, furthering my skills and learning about the process. As the sole group member, I will be responsible for all planning, concepting, direction, asset creation, and programming. My personal expertise however lies in asset creation, specifically 2D and 3D, where my other skills are complementary.

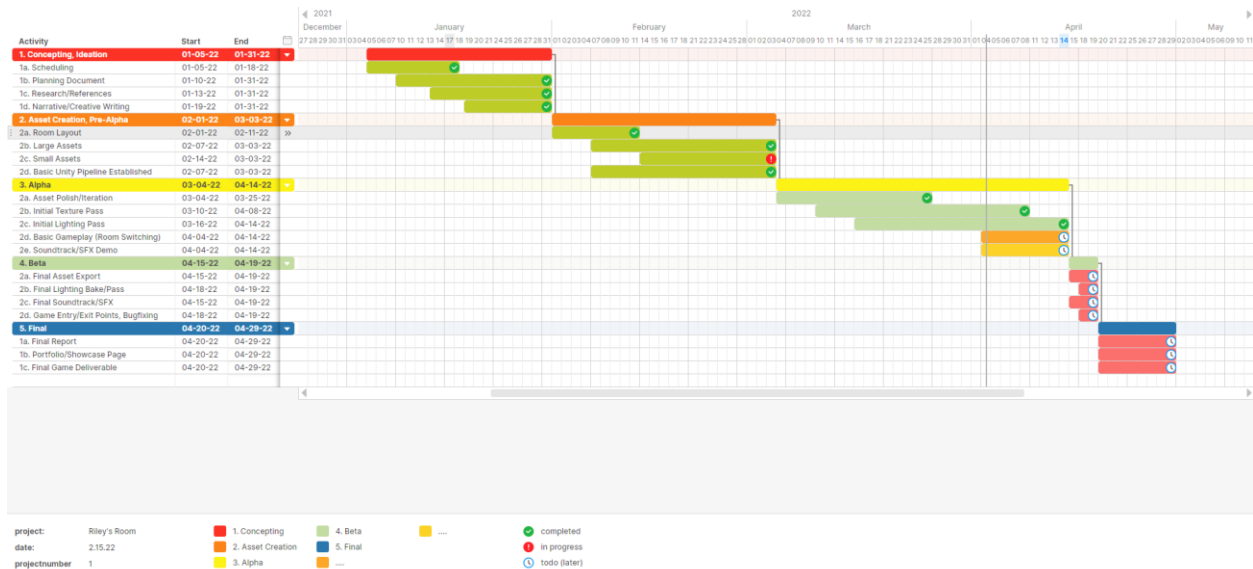


Figure 1 Riley's Room Gantt project schedule

The initial project schedule appears above in a Gantt chart. Project development will be broken down into five stages – concepting, pre-alpha, alpha, beta, and final. This is a best-case schedule and may or may not have to be compressed or corrected due to tentative due dates later in the semester. This project relies on comprehensive planning and establishing pipelines to make creating content easier. A major challenge will be the sheer amount of asset creation needed at the intended level of detail – that is, modeling from reference and using real-world measurements to ensure realistic scale, as well as hand-painting textures and UV editing. By learning and setting up content pipelines and file structures for modeling, texturing, importing assets, and shading, this challenge will at least be minimized. Additional challenges may occur in lighting and shading 3D environments, due to an initial lack of the Unity Universal Render Pipeline. Readily available online resources, guides, and manuals should be of great help.

1.1. Problem Domain

Riley's Room touches on multiple areas within computer science and art. Game development would be the most prominent area, as *Riley's Room* sees the development of itself, an interactive 3D narrative experience, from beginning to end. Specific areas within game development that come as a part of development could be level design, prop modeling, and audio design. General organizational elements of computer science and engineering are present, with concepting, planning, and prototyping being central elements of any software development project. Environment art, creative writing, and musical composition are additional relevant fields, all directly involved in the development of *Riley's Room* with the central goal of creating an immersive, believable environment to evoke a certain mood and narrative.

1.2. Literature Search

In developing *Riley's Room*, the first references are existing games and inspirations from the same genre. These games are both technical and artistic references – in game design these are arguably inseparable. *Life is Strange* is an episodic narrative adventure game developed by Dontnod Entertainment in 2015 [1]. The player plays as Max Caulfield, an 18-year-old high school senior returning to her hometown of Arcadia Bay, Oregon. Apart from the award-winning narrative elements of *Life is Strange*, it is known for its detailed environments and unique painterly art style. Spaces in *Life is Strange* feel immersive and believable for multiple reasons.

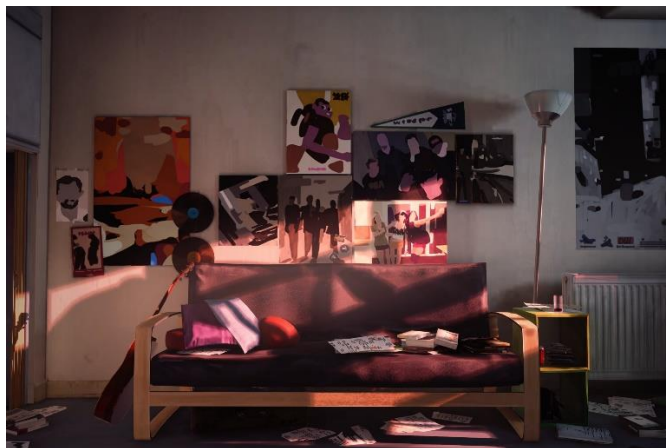


Figure 2 Max's dorm from *Life is Strange*

The gameplay of interacting with objects, making decisions, and conversing with other characters feels unobtrusive, with UI that fades in and out upon approaching points of interaction. The environment design has an unmatched attention to detail, especially as it comes to reflecting the personality of characters in a space – with books, posters, trinkets, and so on. As

described by an artist at Dontnod Entertainment, Edouard Caplain, *Life is Strange* “was aimed to look like animated concept art [2].” The use of realistic geometry with stylized textures expresses this idea well. In combination with other elements such as the narrative and score, composed by Jonathan Morali, spaces in *Life is Strange* feel immersive and believable.

Christopher Alexander is an architect and design theorist who is an Emeritus Professor at the University of California, Berkeley. In his writing, he puts forth a way of thinking about space known as the “Timeless Way”, to create spaces and things with the “Nameless Quality [3]”. In short, Alexander’s “Timeless Way” is a philosophy of design and creation that prioritizes processes and relationships and give rise to and reflect life. This “Timeless Way” can be followed to create things with the “Nameless Quality”, an attribute that, for our purposes, translates to an immersive, believable space. In practice, the “Timeless Way” forces me, as a developer, to consider the natural order of life within these spaces – simple questions that relate to the narrative that help determine the placement of objects and how they look. “Was this chair carefully pushed in by a caring mother while their child was away at college?” “Why is this particular book not on the shelf, but rather resting on top?” “How does a slightly bent cover of a softcover book represent its usage and history?” As a designer, these otherwise subconscious decisions are important to create *Riley’s Room*.

Jesse Schell’s *The Art of Game Design: A deck of lenses* will be an invaluable resource for this project. From high level questions about organization about ideation, to low level technical questions about objective flow and level design, *The Art of Game Design* provides fundamental literature about game development. In Chapter 21: *Worlds Contain Space*, Jesse Schell writes about the parallel between architects and game designers, writing how both seek to shape the experience of people through their surroundings [4]. He defines “well-designed” as the extent to which a game creates an intended experience. Defining an organizing principle is a starting point in creating a space, and *Riley’s Room* seeks to adhere to an open, linear space. Landmarks are also defined, such as large furniture elements like a bed, desk, and shelves.

2. Technical Approach

We begin our technical approach with a high-level view of the game as a piece of software – that is, establishing task flow and user experience despite the small number of interactions. The flow of our program will be simple – the player will load into the game and be greeted with a start and quit game option. Upon starting the game, the player will be loaded into the first scene. Within this scene they can walk around, look, and zoom their view freely. They are also able to interact with a few items with UI fading in as they approach interactable items. They will be able to sit down and simply enjoy the ambience of the environment. At any point,

the player can open the pause menu/journal which will allow them to return to the main menu or switch to the second scene.

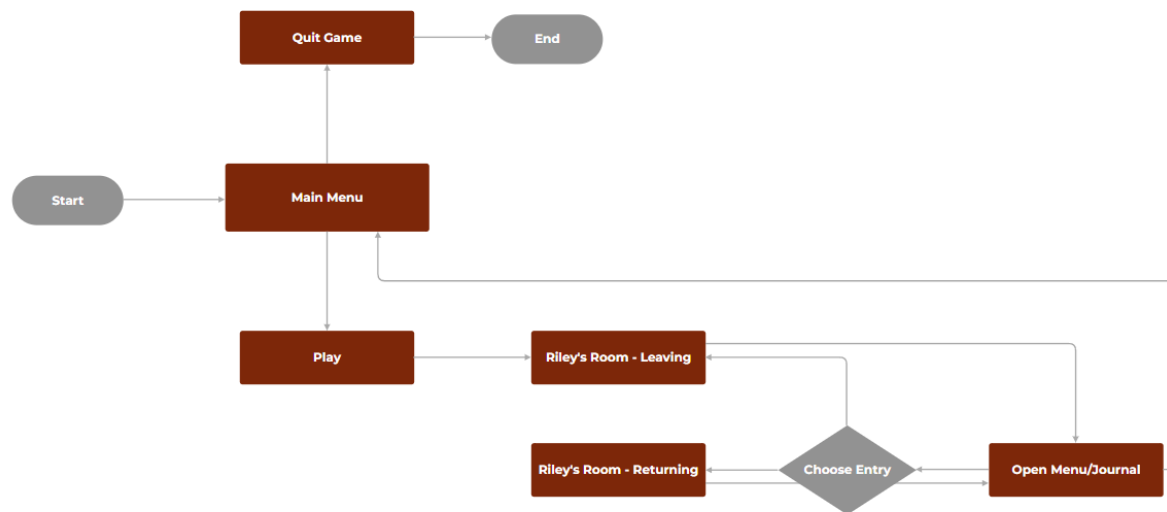


Figure 3 Riley's Room flowchart

Shown above is the flowchart for *Riley's Room* outlining the simple top-level interactions of the game. Our initial Unified Modeling Language (UML) diagram below shows a similarly

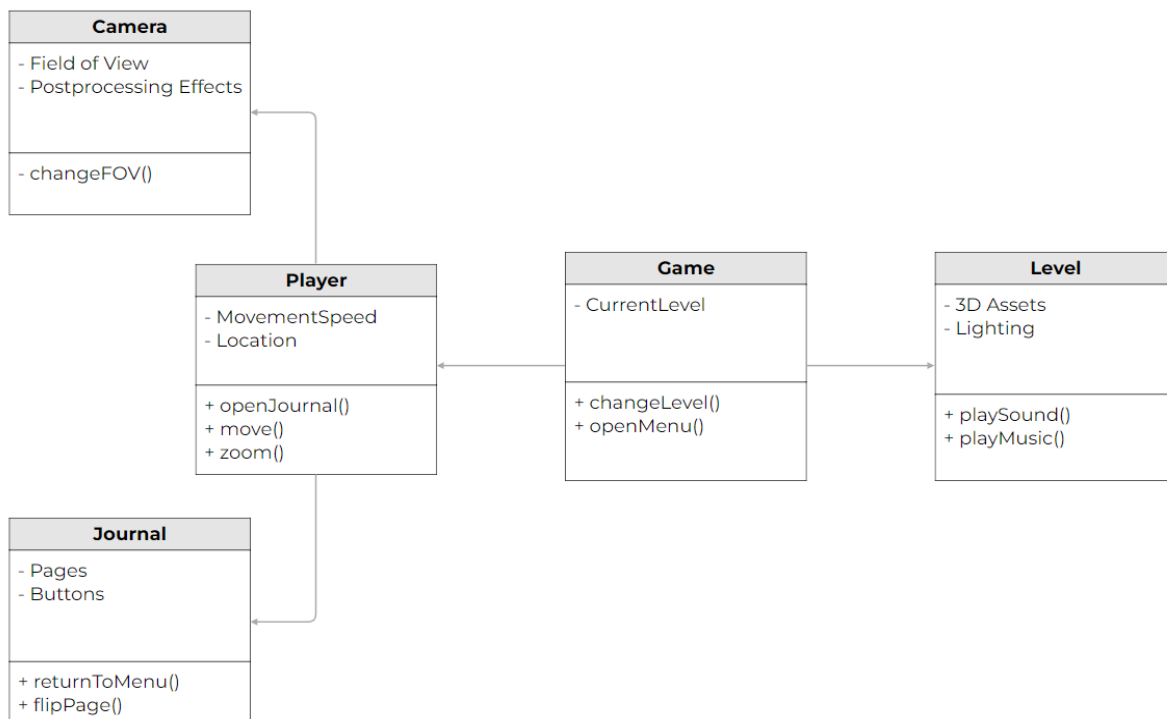


Figure 4 Riley's Room UML Diagram

structured arrangement of elements and software level components. Again, interactions in this project are secondary to the environment and artistic design.

To that point, the design approach for *Riley's Room* is more involved. As loosely reflected in the Gantt diagram, many stages are necessary in the development. Because the goal of this environment is to be realistic, ideas must be grounded. Loose narrative material is written about the character – who they are, what they are like, and what they do. Related material is ideated about the environment – where our environment is geographically and what time it is set in. Using this narrative content, the process of mood boarding brings together visual inspirations for all aspects of the environment – level design, prop design, lighting, and environment design. Mood boarding is the process of creating collages of images that reflect a certain idea or mood.

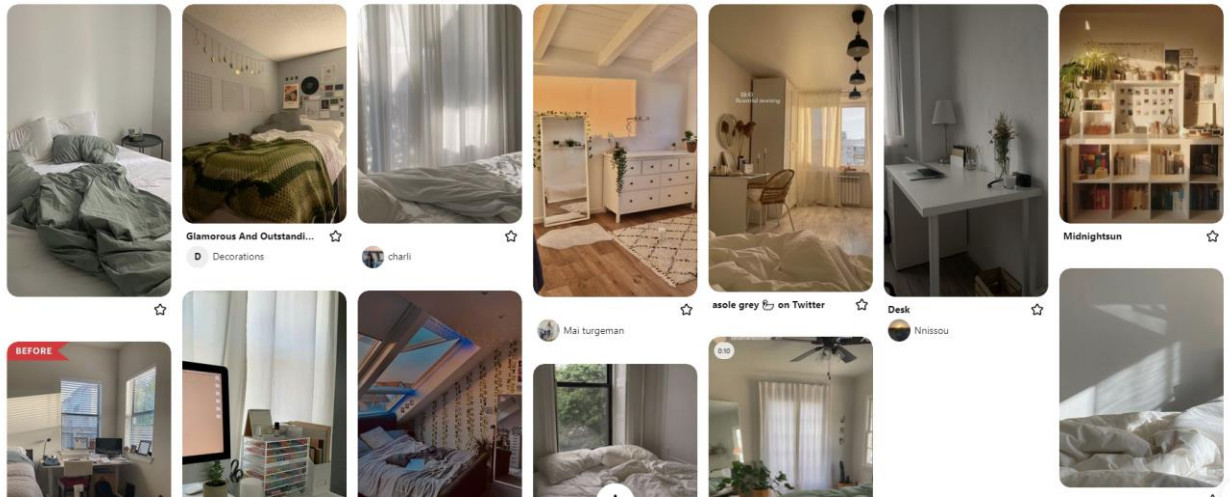


Figure 5 Riley's Room Initial mood board

At this stage, this starts to establish a visual direction for the environment without any thought given to technical implementation

Next, 3D assets are developed in a hierarchy starting with larger level elements first and ending with small objects and details. For the purposes of this report, we can follow the design process of a single mesh, a simple light switch. First, all 3D elements in this project are to scale, so we start with technical reference. We adhere to as many standards as possible, to fit all our meshes and portray a modern space. Some objects like the dimensions of the doors in a room, a bedframe, or

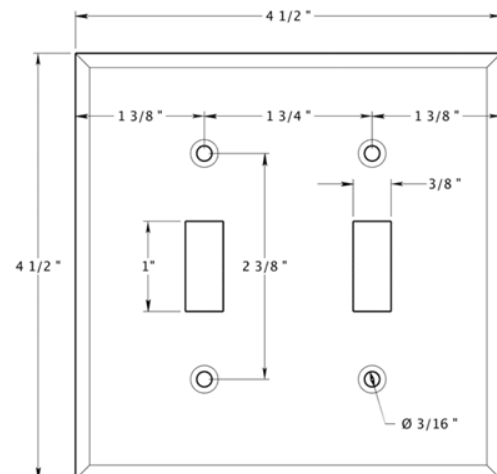


Figure 6 Two-gang light switch dimensions

light switches have accepted technical specifications that are stricter, while other objects like books, pencils, and lights vary in their dimensions. The light switch is then simply modeled in Blender, UV unwrapped, and painted from hand using brushes and noise effects to give a softer, used look. Small details like the screws are represented in textures, and some slight wear is painted around the switches to further emphasize the “lived-in” aesthetic.

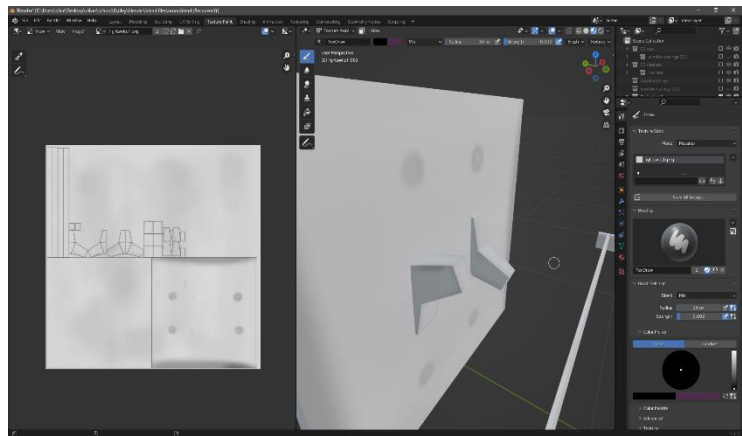


Figure 7 Light Switch creation in Blender



Figure 8 Light Switch implementation in Unity

The mesh is exported out of Blender as an .fbx, imported into Unity, placed in the environment, and settings are modified so a lightmap is generated for the scene with the new addition. This pipeline occurs for every object, again with some meshes requiring more modeling and/or texturing work. Iterations of the room are shown below:

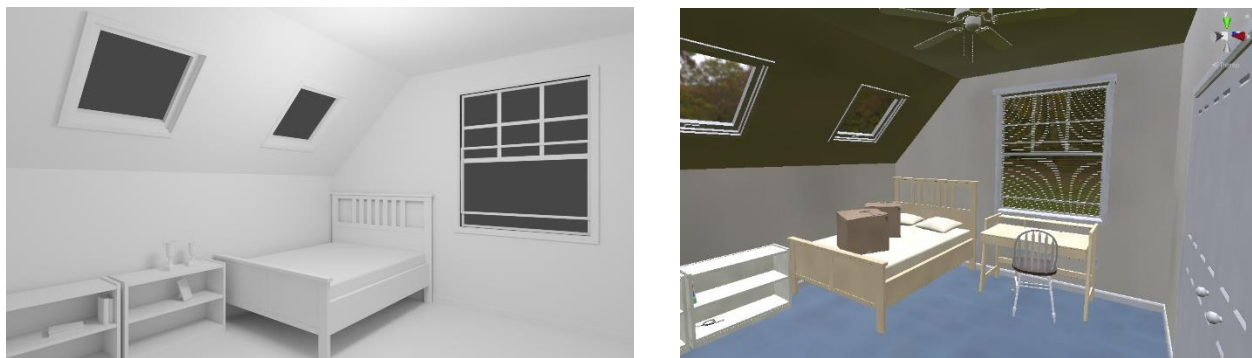


Figure 9 Early renders of Riley's Room

3. Results

It should be noted that screenshots cannot completely capture *Riley's Room*, the demo more completely captures the result – that being said, two complete playable environments are implemented as shown below.



Figure 10 Riley's Room Scenes

Along with ambient noise to simulate the surrounding outdoor environment, light particle effects to simulate dust, and original light acoustic music, the two scenes try to feel immersive and believable, capturing a specific mood and time in a character's life. The player can walk around, crouch and zoom in on objects. Lightmapping with reflection probes, HDRIs, and various lights were used to create the light in each scene.

3.1 Technical Challenges and Solutions

Going into development, the top technical challenge is the sheer number of assets to be created. The solution to this challenge is multifaceted and starts at the beginning of development, creating a clear vision for the environments as written about in earlier sections. Along the way, organized file structures, names, meshes, and materials will help to keep the workflow easy to navigate and efficient. A top-level solution is the scalability of this project – a character moving in and out of their room leaves a lot of space for determining what to put in the space. Logically many objects can be packed away already. In other words, as many objects will be created as possible within the semester but to be functional and believable, only a certain threshold of objects must be passed.

A minor technical challenge could be my initial limited knowledge of the Unity Universal Render Pipeline which I look forward to learning about through the Unity documentation, as well as other online resources.

4. Conclusion

Riley's Room is a work of narrative environment art, with two detail-oriented environments of a character's room before and after a year away from home at college. It explores the parallels between these situations and expresses the mood within each. *Riley's Room* puts forth a distinct visual style and careful crafting of both its scenes, created wholly from scratch. A player may walk around, observe, and enjoy each scene. Future work could entail further scenes, exploring different times of life, increased points of interaction and gameplay, and more 3D objects to add detail and fidelity.

Over the course of this semester, I learned a lot about independent game development, interior design, and environment art. The importance of planning, ideation, and concepting a game comes to mind, as without it my project would be nowhere near where it is today. How I consider game environments has also drastically changed as I've developed this project. On a smaller scale, I learned numerous things about the software I used including Blender and Unity. In general, this project has been, and will continue to be a fulfilling experience to work on and play myself.

4.1 Acknowledgements

I'd like to thank Professor Zhang for her support and trust put in me throughout the semester. I'd like to thank my partner Ingrid for her encouragement and inspiration. I'd like to thank my friend Annie for always inspiring me to create and strive for more.

4.2 References

- [1] *Life is Strange*. Windows PC Version, Dontnod Entertainment, 2015
- [2] Caplain, Edouard. "The Artist behind Life Is Strange." 80lv, 80lv, 8 Sept. 2019, 80.lv/articles/life-is-strange-concept-artist-talks-about-art/.
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4.3 Biography

Oliver Qiu is a fourth-year undergraduate pursuing a Bachelor of Science in Digital Arts and Sciences at the University of Florida (Gainesville, FL). Hoping to graduate in May 2022, he completed his secondary education at Cypress Bay High School in his hometown of Weston, FL. Oliver is an aspiring environment artist and game designer with proficiency in Blender, Unity, and various coding languages such as C++, C#, Python, and Java(script). He has worked on various software projects both independently and as part of small teams. In addition, he has done freelance web development. Music is a large part of Oliver's life both as a hobby and professionally. He plays various instruments, has proficiency in Ableton, and has experience doing session recording work, composing, scoring, and performing. Going forward, Oliver hopes to work on independently published games, and further his recording and composing career in music.