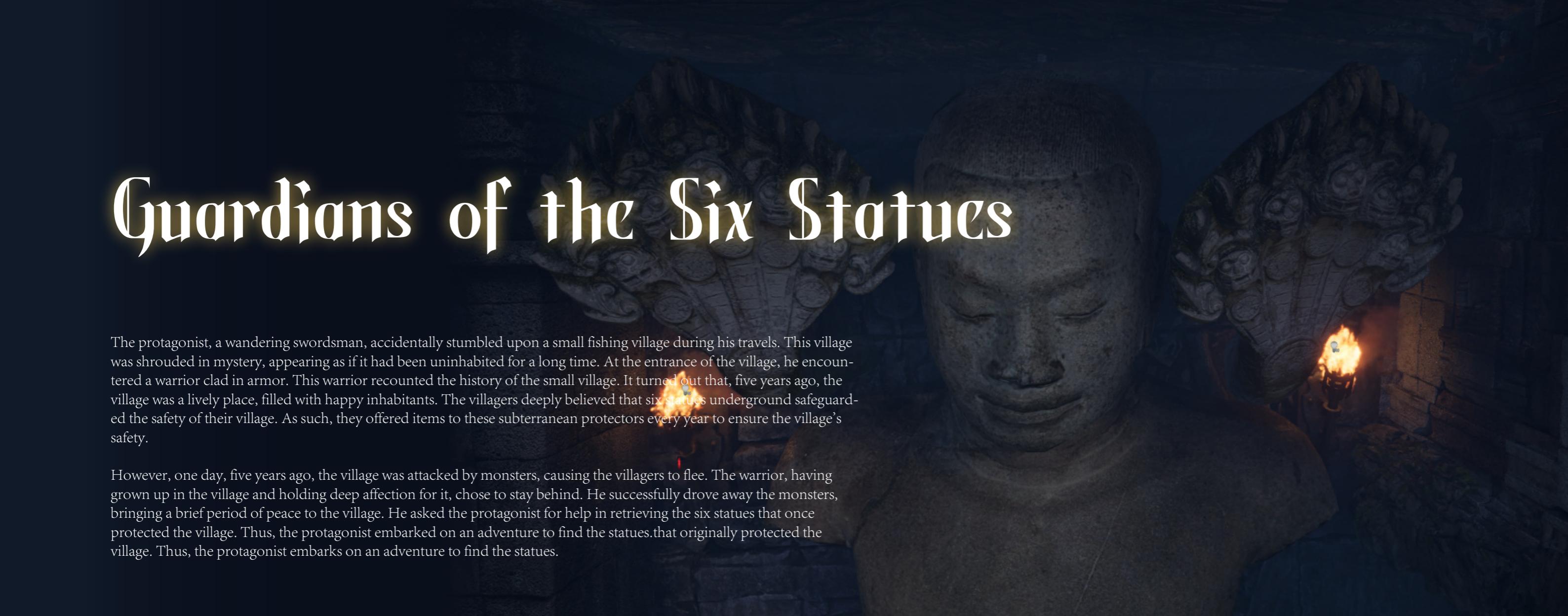


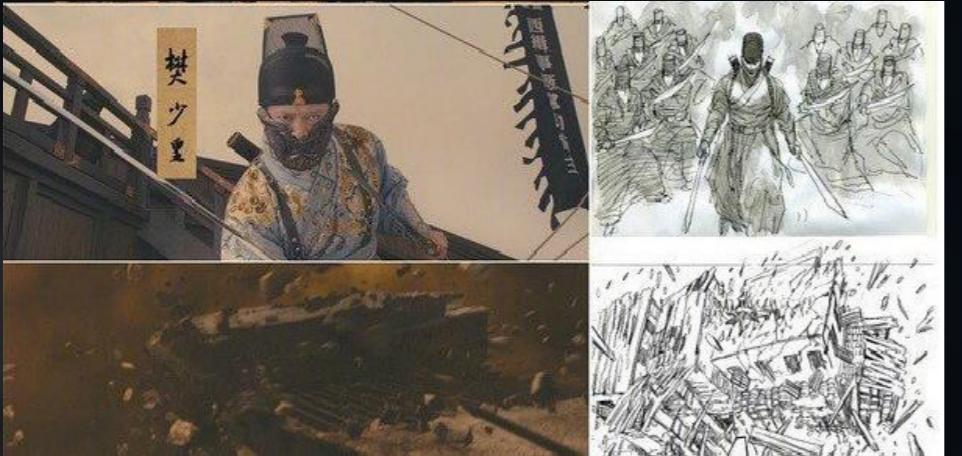
# Guardians of the Six Statues



The protagonist, a wandering swordsman, accidentally stumbled upon a small fishing village during his travels. This village was shrouded in mystery, appearing as if it had been uninhabited for a long time. At the entrance of the village, he encountered a warrior clad in armor. This warrior recounted the history of the small village. It turned out that, five years ago, the village was a lively place, filled with happy inhabitants. The villagers deeply believed that six statues underground safeguarded the safety of their village. As such, they offered items to these subterranean protectors every year to ensure the village's safety.

However, one day, five years ago, the village was attacked by monsters, causing the villagers to flee. The warrior, having grown up in the village and holding deep affection for it, chose to stay behind. He successfully drove away the monsters, bringing a brief period of peace to the village. He asked the protagonist for help in retrieving the six statues that once protected the village. Thus, the protagonist embarked on an adventure to find the statues that originally protected the village. Thus, the protagonist embarks on an adventure to find the statues.

# Inspiration



My game design inspiration comes from both movies and games. Regarding movies, I particularly enjoy the wuxia films directed by Tsui Hark, so my game scenes are filled with a mysterious atmosphere. I have also drawn inspiration from some of Tsui Hark's film works, such as scenes from "The Swordsman" and "Dragon Inn."

As for the level design in the game, I have incorporated elements from games like "Ori and the Blind Forest" and "Inside." The focus is primarily on testing players' reaction abilities and understanding the core mechanics of the game, specifically the control of the jumping system, especially after repeated plays.

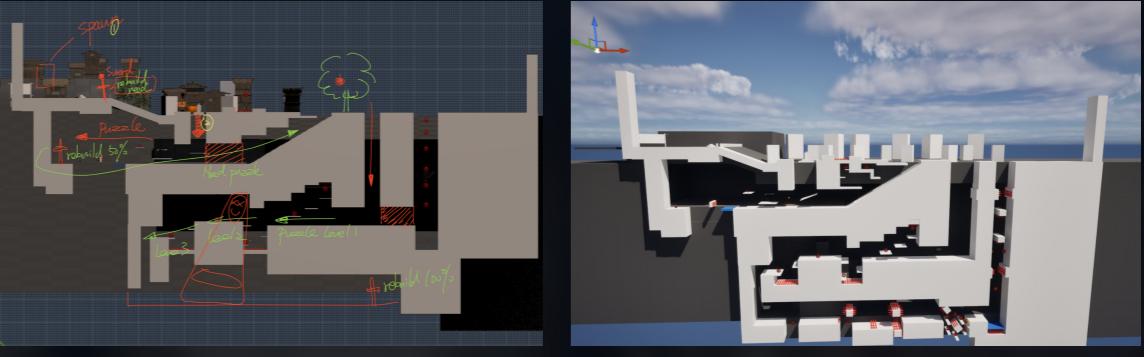
I have also conducted some preliminary designs for the levels. However, there are some differences in the level design compared to the final product.

# Core Mechanics

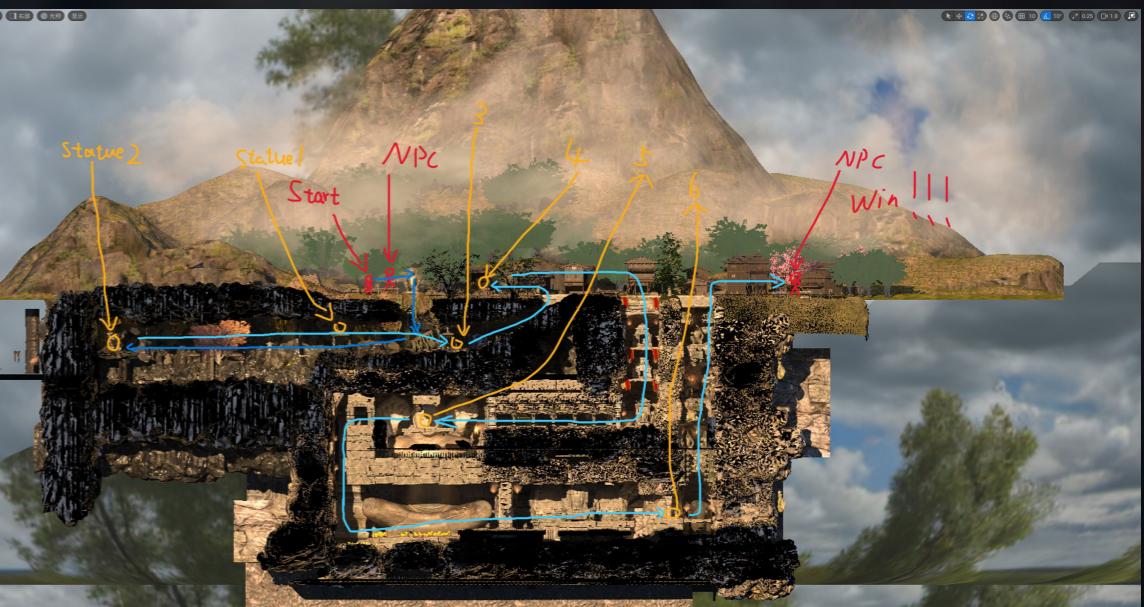
2.5D scroll game featuring jumping to avoid traps and obstacles. The Character Camera Control (3C) of this game is independently modified based on Unreal Engine 5's BP\_ThirdPersonCharacter. It takes the excellent control feel of Third Person Character (TPC) in third-person mode and transplants it into the 2.5D scroll perspective. Additionally, TPC, in conjunction with UE5's physically basic camera, achieves outstanding motion blur effects, highlighting the sense of speed and power of the character. This further optimizes the performance of 3C, allowing players to navigate through various traps. Each time a player successfully completes a challenge, they receive positive feedback.



# Level Design



First-time level design, along with building the white box



Third-level design, final design

# Scene Design



UE5 Scene Resources: Asian Fishing Village Environment + ULAT

While designing the small fishing village scene, I delved deep into the layout and characteristics of various fishing villages for inspiration, ultimately creating a mysterious village that seems long abandoned. This not only perfectly matches the background of my story but also adds a rich layer of mystery. Initially, I was somewhat perplexed about how to handle the cave scene. After several trials and adjustments, I finally developed a style for the cave that is full of mystery. I utilized lighting effects and the natural texture of rocks to create a cave environment that is both mysterious and inviting to explore. In constructing the ruins scene, I drew inspiration from the style of ancient ruins, resulting in a grand and sacred final scene. I incorporated crumbling pillars, eroded statues, and forgotten altars into the ruins, which not only create a sense of historical vicissitude but also make this scene a striking focal point in the game.



Preliminary construction of three scenes



Scene Two and Scene Three having been initially completed

# Shading Part

In creating the scenes for this game, I extensively utilized various rendering features of UE5 and delved into the fundamental principles behind each feature. Throughout the learning process, I sought guidance from professors and teammates, as I believed it would enhance my communication and collaboration efficiency with technical colleagues during the team game development. The following are several techniques that I primarily employed during scene construction to elevate the visual quality.

■ Global Illumination (GI): In the process of researching, I discovered that GI has been a crucial aspect throughout the evolution of modern games, transitioning from early Baking Lighting to the improved Screen Space Reflection + Screen Space Global Illumination (SSR + SSGI) with advancements in Graphics Processing Unit (GPU). Subsequently, modern GPUs support Voxel GI, allowing the rendering of lighting information beyond the screen. Lumen, building upon these advancements, takes it a step further by creatively employing Mesh Card technology to achieve next-generation GI effects.

■ Enabling Virtual Shadow Mapping (VSM) in UE5 allows for an increase in shadow accuracy to the pixel level, achieving over a fivefold improvement compared to Cascaded Shadow Mapping (CSM).

■ UE5, based on the Bidirectional Transmittance Distribution Function (BTDF), calculates Transmission in a highly realistic manner. Enabling Nanite in UE5 allows me to use an immense number of triangles, providing unrestricted creativity when crafting scenes.

■ Enabling Nanite in UE5 allows me to use an immense number of triangles, providing unrestricted creativity when crafting scenes.



# Programming Part

In terms of programming, I implemented a "Camera Tracking" feature for the character to ensure a more dynamic visual experience. I added a health UI for the character and designed basic damage logic using Blueprints. I also set up a dialogue system for NPCs. Regarding traps, while I utilized some assets, I also restructured their Blueprint logic to ensure that the Blueprint logic aligns with my design. Concerning the game's audio aspects, I incorporated corresponding sound effects into most Blueprints to enhance environmental realism. This includes sounds for player jumping, walking, falling, taking damage, trap triggers, and background music for different scenes.



# Final Work



# Final Work

Portfolio website: <https://u13268528193.myportfolio.com/>

Game Download: [https://drive.google.com/file/d/1hAhqr1kdNjLwf\\_CodXZOTkVdc6si6C8V/view?usp=drive\\_link](https://drive.google.com/file/d/1hAhqr1kdNjLwf_CodXZOTkVdc6si6C8V/view?usp=drive_link)

