

Advanced Studio Techniques in Filmmaking, VFX, Sound, and Game Design

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Research & Analysis

Research into liminal spaces, which are central to my project's setting of the pool rooms, reveals their profound psychological impact. These transitional areas, like the endless tiled corridors and water-filled spaces I want to design, evoke feelings of ambiguity, disorientation, and unease^[1]. The pool rooms embody the essence of liminal spaces - a physical location that creates a sense of being "in-between" leading to feelings of uncertainty and discomfort in the viewer^[2]. This setting is ideal for inducing heightened awareness and detachment from familiar surroundings, mirroring the experience of the character in my animation. The lack of clear boundaries or purpose in these spaces, represented by the seemingly endless repetition of tiles and columns, can induce anxiety and confusion. This aligns perfectly with my goal of creating a tense, anxiety-inducing situation where the unknown lurks just beyond the reach of the character's torch. By leveraging the concept of liminal spaces in my pool rooms design, I'm able to tap into deep-seated psychological responses, enhancing the horror and unease that permeate the entire animation.

In my animation, I will be employing specific lighting and camera techniques to heighten the sense of unease, paranoia, and anxiety. The primary light source - a torch attached to the camera - creates deep shadows and stark contrasts, enhancing the feeling of uncertainty as the character navigates the dimly lit space. I'll be using cool, bluish tones in the lighting to evoke a sense of suspense and isolation, which is particularly effective in the water-filled environment^[3]. The unconventional lighting setup, with six strategically placed area lights, will create an unsettling atmosphere by providing just enough illumination to make out the eerie details of the tiled walls and columns.

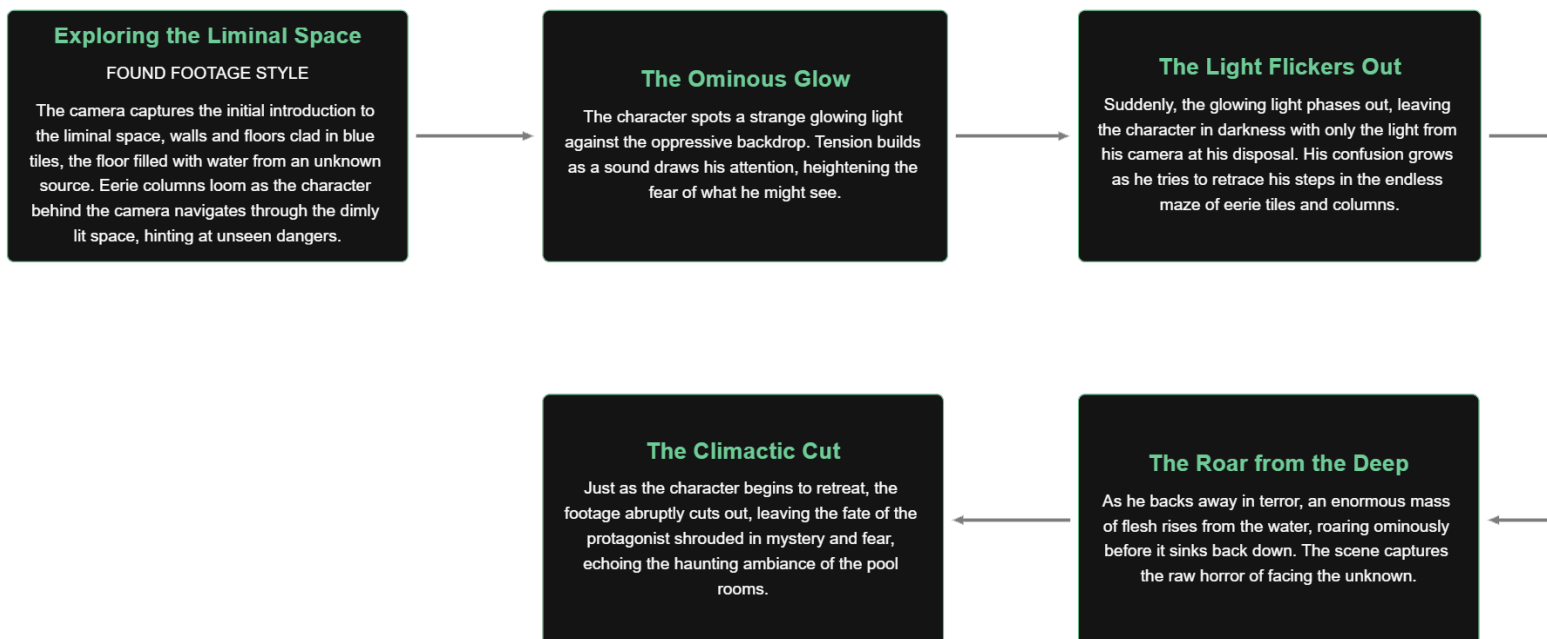
For the camera work, I will be implementing a first-person perspective with subtle shaky movements to simulate the character's disorientation and fear. This handheld camera effect enhances the tension and contributes to the found footage aesthetic. While I don't plan on using Dutch angles^[4], the constant motion and occasional quick turns I am planning to put in the animation serve to distort the viewer's sense of balance and direction within the seemingly endless pool rooms.

In my animation, the effective use of foley and sound design plays a crucial role in conveying horror, fear, and anxiety. Research shows that carefully crafted sound effects can significantly enhance the emotional impact of horror scenes. For my project, I'll be focusing on creating a rich soundscape that includes ambient water sounds and custom foley, which not only establish the setting but also contribute to the eerie atmosphere^[5]. The use of whispering in the background will also help add to the sense of unknowingness and unease. I plan on applying SFX like reverb to these ambient sounds in order to emphasise the vast scale of the liminal space, further enhancing the eeriness. Additionally, the use of infrasound^[6], though not directly audible, can evoke a sense of dread and uneasiness in viewers^[7]. By carefully synchronising these sound elements with the visuals, I will have created a multi-layered auditory experience that heightens tension and anxiety, making the audience feel as if they're navigating the terrifying liminal space alongside the character^[8].

Pre-Production

This project is a short horror animation, approximately 1-2 minutes in length, designed to evoke a sense of fear and anxiety through immersive sound design and atmospheric lighting. The animation will be created entirely in Blender 4.2, utilising the Cycles rendering engine for its superior realism. Adopting a found footage style format, the narrative unfolds in a liminal space known as the pool rooms, a disorienting environment characterised by swimming pool-like tiles and ominous sets of repeating columns. The story follows a lone individual navigating this eerie setting, culminating in a terrifying encounter with an otherworldly entity. This concept aims to explore themes of isolation, disorientation, and the fear of the unknown, leveraging the unique aesthetics of liminal spaces to create a deeply unsettling viewer experience.

The visual planning for this animation centers on creating a claustrophobic and disorienting atmosphere within the swimming pool setting. The storyboard outlines key scenes, including the character's initial exploration, the focus on the solitary light source, and the climactic encounter with the flesh-like entity.



The camera work will employ a first-person perspective to enhance the found footage style, with shaky movements to heighten tension. Lighting will be crucial, with the majority of the scene bathed in an eerie, muted palette punctuated by the stark contrast of the single glowing light. 3D modeling will focus on creating detailed, reflective pool tiles for walls and floors, imposing columns, and the amorphous flesh entity. Visual effects will be employed for the sudden light extinguishment, utilising camera glitches for the electrifying jolt. The final encounter will require careful animation and possibly fluid simulations to depict the entity rising from and sinking back into the water. Throughout the animation, subtle environmental details and distortions will be incorporated to reinforce the unsettling nature of the liminal space, enhancing the overall horror aesthetic.

I'm planning to create a dimly lit atmosphere that balances visibility with an eerie ambiance. Unlike my previous project where darkness dominated, I'll carefully implement lighting to ensure viewers can discern the scene while maintaining a sense of unease. The primary light source will be a first-person torch attached to the camera, simulating the character's perspective. This torch will serve as a focal point, guiding the viewer's attention through the dark environment. By using this technique, I'll create a contrast between the illuminated areas and the surrounding darkness, enhancing the feeling of isolation and vulnerability. The overall mood will be dark and gloomy, with shadows playing a crucial role in building tension and fear. I'll employ low-key lighting techniques to emphasise these shadows and increase the contrast between light and dark areas, which is a common approach in horror films^[9] to imply danger and mystery.

To create a dark and haunting atmosphere, I'll carefully craft a colour palette that reflects the eerie nature of the swimming pool setting. The primary colours will be cool tones like deep blues and greens, reminiscent of murky water, which will contribute to the unsettling

atmosphere. I'll use desaturated colours to enhance the feeling of dread and unease, as muted tones like grey, brown, or dark green are effective in conveying a sense of impending danger in horror animations^[10]. The water will have a murky, unsettling colour with low waves to add to the unnatural feel of the environment. To enhance the underwater atmosphere, I'll incorporate subtle caustics - the patterns of light refraction through water - which will be visible due to the dim lighting. These caustics will not only add realism to the scene but also create shifting shadows that can heighten the tension. By carefully balancing these elements, I aim to create a cohesive and immersive horror environment that will keep viewers on edge throughout the animation.

I've meticulously planned the sound design to create an immersive and unsettling auditory experience. I'll use ambient sounds to establish the eerie atmosphere of the pool rooms, including subtle water droplets, splashing sounds against columns, and ominous whispers or demonic spellcasting in the background. To enhance the sense of scale and eeriness, I'll apply reverb effects to these ambient sounds, emphasising the vastness of the liminal space. I'll accompany the character's movements with carefully crafted sound effects that line in with the actions on screen, such as wading and running through water, to convey panic and urgency. I'll incorporate breathing sounds to heighten the sense of fear and anxiety. Additionally, I'll feature sound effects for camera glitches and distortions to reinforce the found footage aesthetic. I'll accentuate the monster's presence with a terrifying roar and other creature sounds, while the sudden extinguishing of the light source will be accompanied by an electrical phasing effect. Notably, I've decided to exclude background music, allowing the environmental and character sounds to create a more immersive and tension-filled experience.

I'll primarily use Blender 4.2 for all aspects of 3D modeling, asset creation, and rendering, leveraging the Cycles rendering engine for its superior realism. I've chosen this software based on its versatility, extensive online resources, and my familiarity with the tool. I'll employ Wondershare Filmora for composition work, colour grading, editing, and the majority of sound design and visual effects implementation. I'll create all assets entirely within Blender, focusing on creating realistic materials and textures, particularly for the pool tiles. I anticipate potential challenges in animating water for extended durations and achieving the desired wave effect in an enclosed space. I expect rendering time to be significant, especially when using the Cycles engine, which may necessitate careful optimisation and time management on my part.

I've structured my production timeline to efficiently manage the various phases of the project. Initially, I'll conduct research into liminal spaces and their psychological effects to inform my creative process. I'll incorporate this research into my pre-production documentation. Then, I'll commence the practical project, running it parallel with the documentation of the production phase. I expect the post-production phase to be the most extensive in terms of documentation, including a detailed account of any issues I encounter and their solutions, serving as a self-evaluation of my work. Throughout the process, I'll balance my time between the practical animation work and the accompanying written documentation.

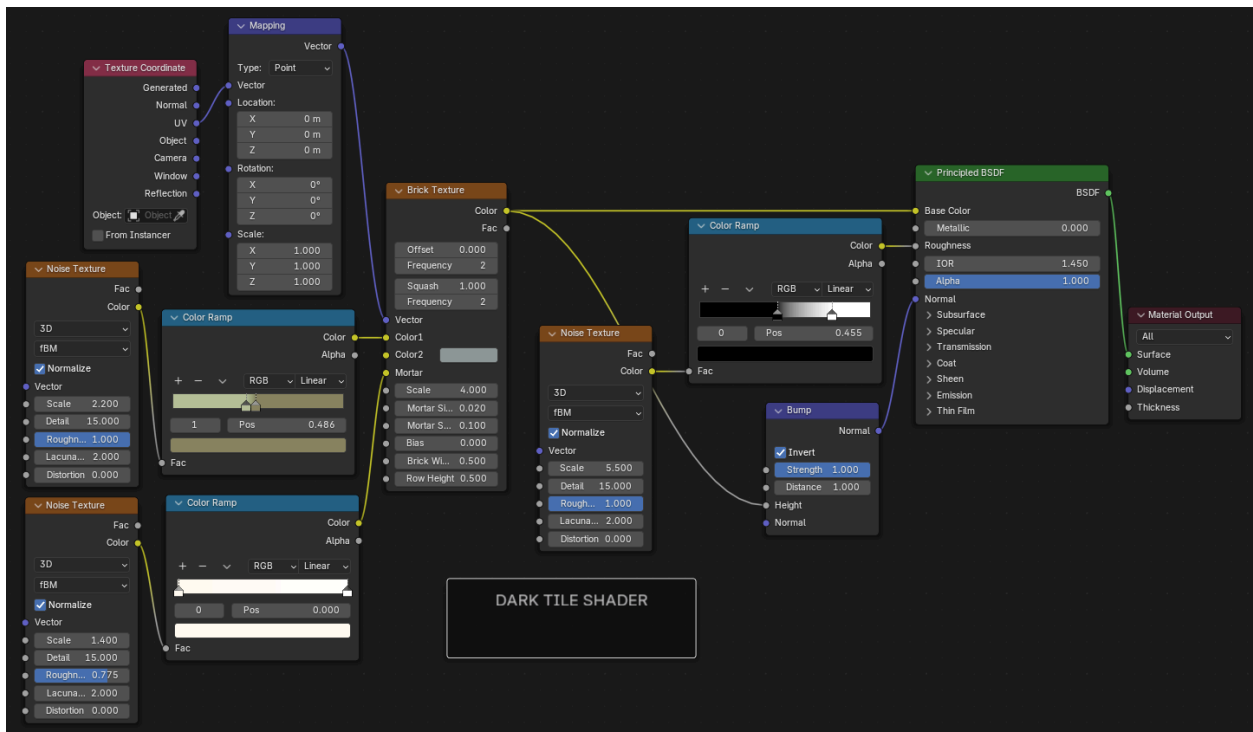
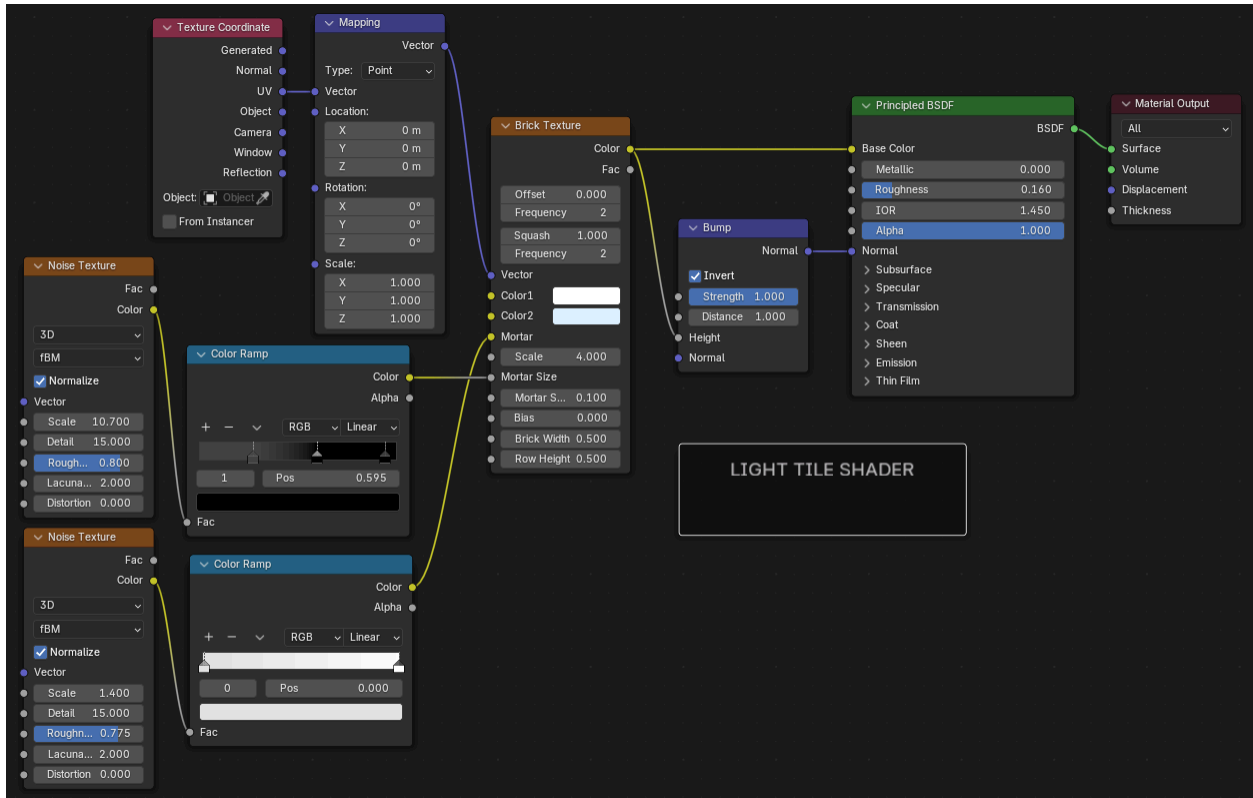
As this is my individual project, I've allocated all resources and responsibilities to myself. My project benefits from minimal direct costs, primarily involving my time investment and electrical costs for running the necessary computing equipment. I have access to two powerful personal computers and university facilities equipped with Nvidia RTX 3070 GPUs, ensuring I have adequate processing power for rendering and production tasks. For sound recording, particularly for water-based effects, I plan to use my iPhone 15 Pro Max, recording in a

controlled environment like my bathtub to safely capture authentic water sounds. I'll extensively utilise online resources, including tutorials and research materials, throughout my project at no additional cost.

Production

In my project, traditional filming techniques were replaced by 3D animation, eliminating the need for green screens or virtual sets. I focused on creating an eerie atmosphere through strategic lighting. The scene is illuminated by six area lights, carefully positioned to create a sense of unease. These lights primarily illuminate the water, which then reflects the light, enhancing realism. I've attached a torch light to the camera, simulating a handheld camera with a light source. For camera work, I used an innovative approach by attaching the camera to a hidden actor object. This setup allows me to move the actor freely, with the camera following its movements. To achieve a realistic camera motion, I set individual keyframes and used linear interpolation for smooth transitions. I added camera shake effects using a plugin to enhance the found footage style.

My approach to character modeling was minimalist due to the found footage format. The monster, designed for limited screen time, consists of a simple armature with four bones controlling a mass of flesh created from sculpted spheres. This design allows for effective animation of the monster rising from and sinking back into the water, enhancing the horror aspect through brief, unsettling glimpses. For the environment, I focused on creating a liminal space that evokes unease and discomfort. I utilised array modifiers to efficiently replicate columns and lighting fixtures across the scene, which not only saved time but also helped optimise rendering. The texturing process was enjoyable yet strategic; I created two sets of tile textures - darker for the submerged floor and lighter for the columns. To streamline the process, I applied the lighter texture uniformly to the columns, as the camera doesn't focus on them closely. The water was created following a tutorial, adapting techniques I've used in previous water scenes.



For VFX, I've currently decided to work with the final render from Blender, that being the one with terrible water animation. To enhance the found footage aesthetic, I've created a VHS-style camcorder overlay to apply over the Blender render. Additionally, I've developed various camera glitch effects and sound-reactive VFX to further augment the footage. The composition and blending of these elements with the rendered footage were done in Wondershare Filmora, due to my expertise with this software.

My audio production process involved a mix of sourced and original sound effects. Some effects were obtained from copyright-free sources online. For foley audio, I initially used generic water splash sounds but found them inadequate and repetitive. I then recorded custom sounds of water splashing in a bathtub at various depths, which significantly improved the audio quality. Ambient sound design involved combining multiple audio tracks in Filmora, including some effects from my previous works. The most challenging and rewarding part was synchronising the audio with the visuals. I particularly struggled with the character's water movement sounds but eventually achieved a more than satisfactory result by adjusting the pitch of my custom recordings.

The camera animation has been completed to my satisfaction, matching my initial vision as seen in the playblast. However, I'm currently facing challenges with the water animation. The main issue is that the water waves are moving too rapidly, and despite multiple attempts, I haven't yet found a solution that aligns with my original concept. To optimise rendering, I followed a tutorial that significantly reduced my rendering times from 8 minutes per frame to about 1 minute and 12 seconds, without compromising quality. This optimisation has been crucial in managing the project's timeline efficiently.

Throughout the project, I've encountered and addressed various challenges, particularly with water animation. I created multiple Blender files to experiment with different water animation techniques, eventually achieving a satisfactory result after much trial and error. This process was time-consuming and at times frustrating, but it taught me valuable lessons about project management and the importance of creating proxy projects for testing complex elements like water animation. Performance optimisation has been an ongoing focus, and I've successfully maintained good performance throughout the project by consistently optimising at each stage.

Post-Production

For VFX compositing, I relied solely on Wondershare Filmora, which proved sufficient for my overlay and composition needs, eliminating the need for more complex software like Nuke. The 3D model integration was primarily handled within Blender during the initial creation phase, as previously mentioned. While I didn't implement particle effects in my final project, I focused on advanced compositing techniques within Filmora, particularly in blending the VHS-style overlay with my rendered footage to enhance the found footage aesthetic.

To enhance the atmospheric quality of my animation, I utilised LUTs (Look-Up Tables) in Filmora for colour correction and grading. This process helped me achieve the desired eerie and unsettling mood consistent with the horror genre. The visual consistency was maintained through careful lighting design in Blender and further enhanced during post-production in Filmora, ensuring that the colour palette and overall visual tone aligned with my initial concept of a dark, haunting atmosphere.

As previously mentioned, my sound design process involved a mix of custom-recorded foley effects, particularly for water sounds, and sourced audio elements. The placement and mixing of these sound effects were crucial in creating an immersive audio experience. The editing and sequencing process primarily focused on assembling the rendered scenes and adjusting the pacing to maintain tension throughout the animation. While specific transition effects were minimal due to the found footage style, I paid close attention to timing and rhythm refinement, ensuring that the visual and audio elements worked together to create a cohesive and suspenseful narrative flow.

The final render was set at 25fps, which, although unintentional, proved satisfactory for the project's needs. This frame rate, combined with the previously mentioned rendering

optimisations, helped in maintaining a balance between visual quality and performance efficiency. Loading time reduction was inherently addressed through the optimisation techniques applied during the rendering process in Blender.

Bug fixing and glitch removal were ongoing processes throughout the project, particularly in addressing challenges with water animation and camera movements. Visual and audio synchronisation checks were a critical part of the post-production phase, ensuring that all elements, especially the custom-recorded water sounds, aligned properly with the visual content to maintain the immersive experience.

The high-quality rendering of the final product was achieved using the optimised settings in Blender's Cycles engine, as previously discussed. For the final export, I chose the MPEG-4 format due to its versatility and wide compatibility across various devices and platforms. This format also proved ideal for sharing on Discord to gather feedback. For file distribution, I utilised 7zip compression software to efficiently package all project files and documentation, resulting in a compressed file size of approximately 1.10GB. The final submission, including both the compressed project files and a YouTube link to the animation, was uploaded to Microsoft OneDrive for easy access and submission.

Submission

The submission file can be found at:

[Advanced Studio Techniques](#)

or

https://uowtsd-my.sharepoint.com/:f/g/personal/2103929_student_uwtsd_ac_uk/Eqicik9jbhNDp6vidRRRz30BXVbPr_-5S8WF2XLgefyL0Q?e=JucXdi

An account is not required to view or download this. I have uploaded the zipped files as requested but just to be safe also added the final submission video. This cannot be uploaded to the Moodle area as the file size exceeds 100MB. The zipped files are around 1.10GB. The link expires on January the 5th, 2027.

Just to be on the extremely safe side, I have also uploaded my submission to YouTube as an unlisted video. The link is as follows:

<https://youtu.be/xH7DvALZypA>

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