Interactive Digital Art and Design
Project Report
Year IV

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Contents

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Project Abstract

My favourite aspect of the IDAD course was the 3D modelling. It soon came to be the skill I was most proficient at when learning during the course so I wanted to learn more and improve my skills using Blender specifically. Blender is a free 3D animation and modelling software that many industries use for their assets, something I hope to be a part of someday as a career. I decided to make a game trailer for a game I would make up to show off my animation, modelling and editing skills.

- Modelling: I had to compile a list of assets to make in blender that would be used in the animation. After planning out what the scenes would look like and what was needed for each scene, I began the process of making the 3D model assets. The main assets included 2 spaceships, one good and one evil, a cockpit area for different shots inside the ship, a pilot, a planet in space as the first stage and the planet surface as the second. Extra models were made later during animation such as a warning signal and laser beams.

- Animation: After the assets were made I began animation. I set up the first scene and imported all assets into it, even ones that weren't in that scene so I could copy the file and paste it again for the next scene without having to import the assets over and over again for each scene. I decided the break the total animation into 21 shots and render/ animate them individually as it was what I was already familiar with and would be easier for my computer to handle.

- Editing: Once all scenes had been made, shot and rendered, I imported all the renders into ClipChamp, an editing software I had on my computer. I put all the scenes together on the timeline in order of sequence and added royalty free music and sound effects from epidemicsound.com, a library of free music and sound effects that fit my project.

-Tools: The tools I used in order to create my project were Blender for animation and modelling, ClipChamp for editing and epidemic.com for sounds and music.

Planet and ship in space from the animation

Project Introduction

The entire project is a game trailer for a game that I made up and design that doesn't actually exist. It is roughly a 1 minute long cinematic trailer that shows off the game and its contents.

I began learning blender over the summer of 2022 for an internship I had with the college to create 3D models of machinery and tech to be used in VR for training purposes. Before that I had no prior experience of Blender so I had to learn on the fly. After the summer I had become used and quite proficient with blender , more so than Maya, another 3D modelling software that was being taught in our classes. I had way more experience with blender than maya so that is why I chose to use that instead.

I wanted to get better with blender as it is an industry standard software for modelling and animation, a field I would like to get a job in. With that in mind, the main purpose of the project and why I chose it was to sharpen these skills for the future by combining my blender animation and modelling knowledge that I have learned. I also wanted to pay homage to my design and game knowledge provided by the course with my Games module from 1st year and my Product Design module from 4th year by using the skills from those modules for the design and function of the ships.

Enemy ship from animation

Background

I originally wanted to make a whole game using my own assets from blender, but with my not so sharp coding skills, my lecturers and I agreed it may be too much. I then thought of an idea that incorporated the assets of the game but not the heavy coding demands of one, a cinematic game trailer. This way I could show off my blender 3D modelling and animation skills, which is my strongest skill and not get backed up by my coding skills.

Blender is a free to use 3D modelling software that is the industry standard to make game, film or any models and animation. Blender provides the user with the tools necessary to create high quality assets and animation. It allows the user to create from shapes and then break down and manipulate the shapes to create your asset. Blender also allows for a variety of additional add ons that can help streamline the creation process whether it be quality of life add ons that help access functions and tools from the click of a button to generating assets using numbers and sliders to adjust until you are happy with your asset.

Clipchamp is a video editor that is free for Microsoft account users to create and edit videos. It allows the user to add and splice video clips, sounds and music together into one video and add extra effects and filters on top. You can adjust speeds of certain clips and audios to blend them more effectively together. It also allows you to cut, snip and split clips and audio to make them more precise when you want them to play or display.

Epidemicsound.com is an online site that gives users access to a massive library of music and sounds to choose from. All the sounds and music are royalty free, the site does require a paid subscription but you can get a one month free trial like I used. It allows user to search for sounds you may want (such as laser blast) or sort by genres (such as suspense) and it will provide a list of relevant options to choose from.

Pixilart.com is a site that allows you to create art online for free. It allows users to select and adjust a canvas and then draw using different colours to create what you want. I used it to create different colour palettes for my assets to use when colouring in the assets in blender.

Feasibility Study

My project specifically wouldn't involve many clients aside from commissions, as it would be aimed more so toward potential employers that would hire artists, animators or designers. The project will primarily be benefitting me by adding to my portfolio, showing off my art, animation and design skills which could potentially lead me to employment. This is the main reason I went with this project as it shows off my best skills while also advertising to employers that would hire me for my preferred industry. With regard to legality, all assets in the project were created and designed from scratch aside from the music and sounds, but those were obtained from a copyright free website. The only problem or risk I could encounter would be my ability to create and animate on schedule, as time management would be my only pitfall.

Requirements Analysis

For my project, the requirements I had to meet are listed below in order of completion.

1. **Plan out scenes:** The first step would be to plan out each scene. I had to make a story board on how the film would play out and compile a list of the assets needed for each scene. I also had to plan for the runtime of each scene to sync with music, sounds and animation. Animation in blender is done using frames so I had to figure out how many frames would be needed for each scene and animate accordingly. This would be a high priority as rushing headfirst into animation and modelling without a plan would lose a lot of time going back and fourth animating and modelling whenever something new was needed.

2. **Create assets:** Once the scenes were planned out I began the creation of the assets I had made a list of. This process would take a while as there were many different props, characters (including ships) and backgrounds to create for the various scenes. Assets needed to be made without a high poly count as rendering would take up way too much time. This would also be a high priority as no models means no animation. The models also would be the main way of showing off my blender skills so I had to prioritize them in that sense too.

3. **Animation and rendering:** When I had completed the assets, the next step would be to animate all the scenes that were planned out with the created assets. I started by bringing all the assets into one scene, then animating with the assets needed for that specific scene. Going through the list of scenes, I animated them using the assets one by one until all scenes were made. Once that was done, I set the frame parameters and a destination to render to and began rendering each scene. I would also set this as high priority as like the modelling, it shows off my blender skills to potential employers for my preferred field.

4. **Polish and additional assets:** Once I had everything animated and rendered, I went back to see how they all looked while rendered. Most turned out well, but there were some adjustments and re-animation that had to be done on some scenes and models.

Additionally, while reviewing the footage I had a couple extra assets made to add to scenes as extra detail. This is also high priority as even though the majority of the work was done by this point, this extra time spent reviewing allowed me to catch errors or polish scenes that needed a little improvement.

5. **Edit:** Once everything was made, all renders where then put into the editing software in sequence. I then added the sound effects to match up with what was happening on screen as well as music to add to the atmosphere as most game trailers did. This is may be the lowest priority aside from polish but nonetheless, still of high priority in my case as I decided to make scenes individually rather than all at once so they had to be stitched together via editing.

Project Milestones

Disclaimer: As I got a deferral from my project to be completed at a later date, I did not have aid in my project like my peers did and did not keep great track of dates specifically. I was slow to start by picked up steam as time grew shorter.

The milestones for the project were as followed:

1) Plan out what the story was
2) Plan the scenes with a storyboard
3) Make a list of the assets for the scenes
4) Create the assets for each scene
5) Set up the stage for animating by compiling all assets into once scene
6) Animate the scenes one by one
7) Render each scene when animated
8) Review footage for errors and polish
9) Fix issues and add extra assets
10) Re-Render scenes with added assets and polish
11) Add renders into video editor
12) Choose sound effects and music to be used in trailer
13) Place the scenes and audio in editor in sequence
14) Final review and add touch ups if needed

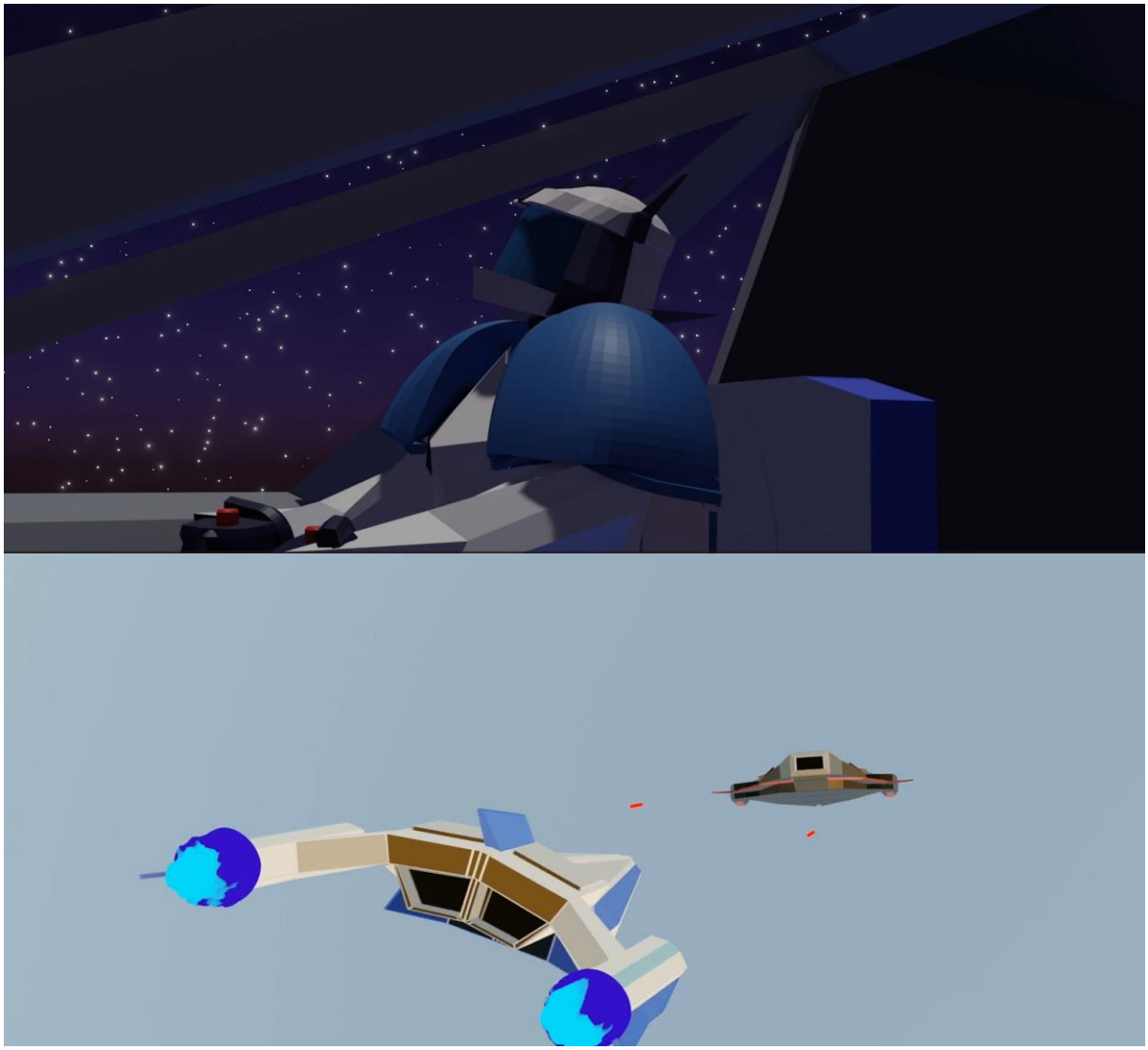
Research

The majority of my project was done using blender for both animation and modelling so that is where most of my research was in. A little bit about blender, Blender is a free open-source 3D graphics software that can be used for animation, modelling, rendering, coding and more. Blender was created in 1994 and is currently being developed and overseen by The Blender Foundation. Blender gives users a large variety of tools to use in the creation of assets. Tools that allow the users to animate, create models such as vehicles or characters, use coding languages like python to manipulate and create with the blender environment and create visual effects. Blender allows for a huge number of add ons that range from minor improvements like accessing functions from one button rather than navigate to it, to major improvements like adding functions of creating or rigging assets. Add ons are added nearly every day as blender has a very large and active community that help improve blender for everyone. This is because it is both free and open source which allows users to view and add their own additions for people to use. Blender allows for high quality modelling and rendering using features such as eevee engine that allows for ray tracing which calculates light rays and how they interact with the blender environment like they would in the real world, creating high quality and accurate lighting and rendering. Blender has become the industry standard for animation and asset creation, making it an important software to learn and master if you want to work in that field.

Additional research includes the movement of the ships in the animation. Reviewing various media that incorporates space ships flying through space, I learned to mimic how they flew with their rotations and movement. A great example I followed of a space dog fight was from the Star Wars show, The Mandalorian in Season 1. I used this as my basis for how the ships moved and rotated as well as how they flew in curves and arcs and not rigid movement.

Project Description

My final product is a roughly 1 minute long cinematic trailer for a game I made up. Edited together with royalty free music and sounds incorporated, it portrays a dogfight in space between two ships. We are given the perspectives of the protagonist of the short and his reactions to various scenarios in the trailer.



I learned a great deal of blender and how to use it more effectively. I have done short animation before, about 5 to 6 seconds, but never something of this scale. I learned planning is an important aspect of creation and is imperative to have a good plan going into any project.

The final video may not be up to the visual quality I had initially hoped for, but I am happy with how it turned out in the end and hope to continue working more and more with blender in the future. I enjoyed the project and the challenge it gave me, testing myself everyday learning more and more about what my future could entail.

Conclusions

Aside from the obvious fact that I was alone with this with no aid, I feel it went reasonably well. I made everything up to a standard I was content with from assets to animation for someone of my level and situation. I was very pleased with how the whole thing panned out in the end and watching the finished for the first time made me smile with pride. The main things that went wrong would be me not uploading to github everyday and only saving locally. I wish I remembered to update whenever I made progress on the chance something went wrong with my machine so it would be safe. I feel I made the correct choice with blender due to my prior experience during my work placement over the summer of 2022.