

Document of Critical ReflectionI

I. Project Background and Personal Role

In this 3D animation project, I undertook all the production aspects, including pre-planning, character design, animation, rendering and post-processing. The project is about two robots who are caught in the process of stealing batteries and eventually punished. The goal of the entire project was to demonstrate my animation skills and mastery of tools through this simple and dramatic plot.

As the sole executor of the project, my role was not only limited to the technical operations, but also included the overall planning and management of the project. This role gave me control over the entire project process, but also brought challenges in many aspects: reasonable time allocation, efficient multi-tasking, and strict quality control in all aspects. These challenges prompted me to constantly adjust and optimise the production process, but also exposed many shortcomings.

II. Success or failure of the process and quality assessment

1. Pre-planning and Storyboarding

The first step of the project was pre-planning and storyboarding. I spent a lot of time on storyboarding, striving to make every shot effective in conveying the storyline. However, when reviewing this stage, I realised that although the storyboard design was relatively complete, it lacked in-depth consideration of the actual production feasibility. For example, some complex shot designs were found to be more difficult to realise in post animation production, leading to rework and modification, which increased the overall time cost. This suggests that I need to pay more attention to the feasibility assessment of technical realisation during pre-planning, rather than just focusing on creative expression.

In addition, during the storyboarding process, I gave less thought to how to achieve the best results with limited time and resources, which led to some shots needing to be drastically simplified in the actual production. In the future, during the storyboarding stage, I plan to adopt a more pragmatic approach by setting a realistic goal from the beginning and conducting several reviews and evaluations to avoid unnecessary revisions at a later stage.

2. Model and Character Design

Model and character design is a key aspect of the project, I used Maya for modelling and binding of the two robot characters. In order to ensure the flexibility and expressiveness of the character's movements, I did a lot of detailed work on the bone binding and controller settings. However, during the process, I found that I was not able to optimise the details enough, especially in the detailing of the character's facial expressions and hand movements, which resulted in the expressiveness of certain animations being limited.

In addition, the number of faces and material details of the model had a greater impact on the

rendering performance in the later stages, which reflected that I did not pay enough attention to performance optimisation in the modelling stage. In character design, I tended to pursue visual effects, but neglected the reasonable use of computing resources. This was especially prominent in the post-rendering, resulting in long rendering times and difficult adjustments. In the future, I need to be more balanced between the visual details of the character and the performance needs, especially when faced with limited time and resources.

3. Animation Production

The animation production phase was the core of the whole project, in which I used Maya's animation timeline and graphic editor for keyframe animation control. As the characters involved in the project were robots, the rhythm and strength of the movements became a major challenge. In the early stages of animation production, I experimented with a variety of animation styles, including exaggerated expressions and more realistic mechanical movements, and ultimately chose to combine the two to enhance the dramatic effect of the story.

During the production process, I realised that it required a higher level of patience and energy to grasp the rhythm of the movements and polish the details. Especially when faced with long hours of solo work, it is easy to handle certain action details hastily due to fatigue. For example, the transition between some key frames was not smooth, resulting in a lack of rhythm in the overall animation. This situation shows that I need to pay more attention to details in animation production in the future, and be strict with myself in every key step to avoid affecting the quality of the final work due to negligence.

4. Rendering and Post-processing

The final stage of the project was the rendering and post-processing using UE5, whose high-fidelity rendering effect improved the overall visual performance of the animation, but also brought about the problem of long rendering time. Due to the lack of in-depth understanding of rendering optimisation, I spent a lot of time on lighting and material effect adjustments, which led to progress delays. The problems in this phase reflected my shortcomings in rendering techniques, especially the lack of effective optimisation strategies when faced with complex scenes and multiple light sources.

Through this experience in the rendering phase, I realised that in the future, I need to not only focus on the final visual effect in the project, but also need to learn more in-depth about the rendering optimisation techniques, especially how to improve the efficiency through technical means under the time and resource constraints. For example, learning how to use LOD (Level of Detail) techniques, optimising light source settings and reducing unnecessary special effects will help to significantly reduce rendering time while ensuring effectiveness.

Character Impact and Project Results

Throughout the project, my role had a direct and far-reaching impact on the final result. As the sole implementer, my decisions and efficiency directly determine the progress and quality of the

project. While the sole responsibility approach allows for more flexibility and quicker decision-making, it also comes with a great deal of pressure and risk. A mistake or delay in any part of the process can have a knock-on effect on the entire project, which is especially evident in the rendering phase.

Due to the lack of team support, all the problems in the project had to be faced by me alone, a situation that is prone to self-blind spots. For example, during the optimisation of the model and rendering, I failed to identify and resolve performance bottlenecks in a timely manner, resulting in some rendering times far exceeding expectations. Although this kind of one-man operation has honed my ability to control the whole process, it has also exposed my mishandling and slow reaction when facing complex problems.

In addition, my working style and efficiency had a significant impact on the quality of the project. Under time constraints, I tended to choose safe and familiar technical paths rather than taking risks to try new solutions, which ensured the completion of the task but also limited the room for innovation and optimisation of the project. In the future, in teamwork, rational allocation of tasks, making full use of team members' strengths, and more accurate time estimation of tasks will be the direction I need to improve.

Personal Reflection and Improvement Direction

1. Maintaining Motivation and Time Management

In the process of the project, I found that when I face long time and high intensity work, it is a big challenge for me to maintain my motivation. Especially in the middle and late stages of the project, when the complexity of the tasks increased and time was tight, my productivity and control of details decreased. This shows that I need to better manage my work rhythm and mental state in the future, and maintain a continuous and efficient output through scientific time allocation and phased breaks.

2. Technical In-depth and Overall Improvement

Although this project allowed me to fully experience the various processes of animation production, there is still a lot of room for improvement in terms of technical depth. In particular, I still need to learn more about rendering optimisation, complex animation performance and efficient modelling. Through participation in more practical projects and continuous self-learning, I plan to achieve a higher level of professional improvement in these key areas.

3. Better balance between creativity and realisability

During the course of the project, I realised that it is extremely important to find a balance between the pursuit of creative expression and practical feasibility. In the future, I will pay more attention to the connection with technical realisation in the creative planning stage, and set more realistic goals and plans from the beginning to reduce the workload of later adjustments.

V. Future Prospects

The experience of this project has given me a clearer direction and goal for my future work. As an animator, I plan to focus on the following aspects in my future work:

1. Optimising workflow

Based on the experience of this project, I realise that efficiency is not only dependent on technical improvements, but also requires optimisation of the entire workflow. In the future, I will explore more efficient workflows, using automation tools and optimisation strategies to reduce repetitive labour and improve overall efficiency.

2. Deepen professional skills

In the future, I will focus on strengthening my technical depth in rendering and animation expressiveness. By constantly learning new software features and industry best practices, I aim to make significant improvements in the quality of my work. In particular, in-depth learning of real-time rendering and dynamic effects optimisation will lay the foundation for the execution of more complex projects in the future.

3. Enhance Multitasking Ability

The experience of completing an entire project independently has made me realise the challenges and importance of multitasking. In my future work, I will focus on improving my ability to cope with high-intensity, multi-tasking environments, and develop more efficient time management and stress management skills to ensure that I can maintain a stable output under complex working conditions.

Through reflecting on this project, I have come to a deep understanding that as an animation producer, I need to continuously improve my technical skills, optimise my workflow, and find the best balance between creativity and practical feasibility. In the future, I will use this experience as a basis to continue to work hard to improve myself and strive for greater progress and breakthroughs in my career.