Construction of 3D Animation Film 'The Little Match Girl'

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***Abstract*—This thesis details the construction of a 3D animated film titled 'The Little Match Girl' by Nguyen Xuan Duc, a student from the Multimedia Communication major at Thai Nguyen University of Information and Communication Technology. The work covers the theoretical foundations of animation, the development of the script, and the creation of the film using software tools such as Blender, Adobe After Effects, and Adobe Premiere. The final product is a 3D animated film that includes several scenes and character designs. The author states that the film meets the requirements set by the department, with a well-executed script and character designs. However, some aspects such as character appearance, camera angles, and motion are noted as areas for improvement. The thesis also discusses the current state of animation in Vietnam, highlighting the challenges and opportunities. The author notes that while there is a growing interest in animation, the industry faces issues such as limited production and distribution. The thesis suggests that creating high-quality, meaningful animated films can attract audiences and improve the industry's standing.**

***Index Terms*—3D animation, The Little Match Girl, Blender, Adobe After Effects, Adobe Premiere, script**

I. Introduction

The thesis provides an overview of the history and development of animation, focusing on both international and domestic trends. It also discusses the principles of 3D animation and the production process. The author, Nguyen Xuan Duc, aimed to create a 3D animated film that adheres to the approved script and meets the standards set by the department. The work covers the theoretical foundations of animation, the development of the script, and the creation of the film using software tools such as Blender, Adobe After Effects, and Adobe Premiere. The author also developed a script based on the original story of 'The Little Match Girl'. The thesis highlights the challenges and opportunities in the Vietnamese animation industry, noting the growing interest in animation but also the industry's limitations in terms of production and distribution [1].

II. Methods

The methods section describes the use of software tools such as Blender for character and environment design, Adobe After Effects for animation, and Adobe Premiere for final editing. The author also developed a script based on the original story of 'The Little Match Girl'. The script was carefully crafted to ensure it met the department's requirements. The author used Blender to design the characters and environments, creating detailed models and textures. Adobe After Effects was used for the animation, allowing for the creation of smooth and fluid movements. Adobe Premiere was used for the final editing, ensuring the film was polished and cohesive. The author also mentions the importance of sound design, which was done by recording the voices of the characters and synchronizing them with the animation [1].

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III. Results

The final product is a 3D animated film that includes several scenes and character designs. The film features a young girl selling matches in a snowy setting, with scenes of her lighting matches and the magical moments that follow. The author states that the film meets the requirements set by the department, with a well-executed script and character designs. However, some aspects such as character appearance, camera angles, and motion are noted as areas for improvement. The film includes a total of 15 scenes, each with its own unique animation and character design. The author acknowledges that the character designs could be more detailed and the camera angles could be more varied to enhance the storytelling. The motion of the characters and the environment is noted as being smooth and fluid, but there is room for improvement in the complexity and realism of the animations [1].

IV. Discussion

The discussion section evaluates the current state of animation in Vietnam, highlighting the challenges and opportunities. The author notes that while there is a growing interest in animation, the industry faces issues such as limited production and distribution. The thesis suggests that creating high-quality, meaningful animated films can attract audiences and improve the industry's standing. The author also discusses the importance of collaboration and the need for more support from the government and private sectors to foster the growth of the animation industry. The author suggests that the industry can benefit from more investment in technology and training to improve the quality of the animations. The thesis also highlights the potential for the Vietnamese animation industry to contribute to the global market and attract international collaborations [1].

V. Conclusion

The thesis concludes that the author has gained a deeper understanding of 3D animation principles and the software tools used in the process. While the final product meets the requirements, the author acknowledges areas for improvement and plans to continue learning and refining their skills. The author also emphasizes the importance of collaboration and the need for more support from the government and private sectors to foster the growth of the animation industry. The author plans to continue working on improving the quality of the animations and exploring new techniques and technologies to enhance the storytelling. The author hopes that the work will contribute to the development of the Vietnamese animation industry and inspire others to pursue careers in animation [1].

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