A Simulation Game for Line Memorization

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Figure 1: *Two Screenshots of the Game*

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I.3.7 [Computer Graphics]: Three-Dimensional Graphics and Realism—Virtual Reality;

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1 Introduction

Line memorization is a key aspect of the performing arts. Ideally, actors will practice their lines together, as this most closely emulates the actual performance, and is the best way to learn lines. However, circumstances often arise the force actors to learn lines on their own. This is a much more ineffective way of memorizing lines, and existing techniques to help with this usually involve memorization techniques, or significant extra work on the actor's part. This project aims to solve this problem by utilizing game technology to assist with line memorization. While games are traditionally a medium for entertainment, there is a rising trend in "serious games", or games which are used to help their players in the real world [Tarja et al. 2007]. This game falls under that category, and is (as far as we know) the first game to specifically address the problem of line memorization.

2 Approach

When the game begins, the player selects a character and scene to practice. The game loads the model of the set for the scene, and provides non-player characters (NPCs) to stand in for all other characters. The player starts the scene, and the NPCs start speaking. When the player needs to say a line, they input it via text or speech. This input is compared word-for-word to the stored script. If the player's line was correct, the NPCs and scene proceeds as normal. If the line was incorrect, the Director NPC intervenes. This NPC will point out the player's error, then provide a hint as to the correct line. The player can also manually call the director for help, via a button in the game. As the player requests more and more help from the director, the director will get angrier, and his responses will change to reflect this mood shift. Once the scene is complete, the player is given a summary of his/her performance. This summary shows what percentage of the lines the player got correct, and how many times the director had to provide assistance to the player. If there were too many incorrect lines, or the director had to provide too much assistance, the player fails the simulation.
The game is implemented via Epic Games' Unreal Development Kit [Games 2012], with custom code to handle the NPC dialogue and actions. Rather than have the NPCs use fixed, predetermined lines, they have been designed to act like chat robots, in that they alter their responses according to the player's input.
This approach is an effective aid in line memorization due to the engaging experience it creates. By implementing line memorization in a game format, it ceases to be a task requiring completion, and instead becomes an enjoyable and replay-able activity. Memorization is a byproduct of the experience, rather than the end goal. The engagement is enhanced by the speech and responses of the NPCs (as opposed to having the player respond solely to text prompts).

3 Effectiveness and Future Work

While the effectiveness of the game has not been tested, it is something we hope to do in the near future. Test subjects would be provided a script and role, and would attempt to learn their lines using the game. They would then be asked to recite their lines, and the results would be compared against a control group who did not use the game. Such tests would also allow us to get user feedback on the successes and failures of the game.
There are a number of different sources of future work to be done on this game. Currently, the available practice scenes are hard-coded into the game. Ideally, the user would be able to upload whatever script they desire and, in addition to selecting a scene, would also select which set to practice the scene in. We would also like to improve the quality of the feedback the player receives, giving specific advice as to lines which need improvement, and how best to improve them. Lastly, we would like to further increase player immersion by improving the quality of the character models and sets, and by using a motion capture device (like Microsoft's Kinect) to let the player act out the scenes, instead of just saying their lines.

References

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