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author={A. Egges and G. Papagiannakis and N. Magnenat-Thalmann},   
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abstract={In this paper, we present a simple and robust mixed reality (MR) framework that allows for real-time interaction with virtual humans in real and virtual environments under consistent illumination. We look at three crucial parts of this system: interaction, animation and global illumination of virtual humans for an integrated and enhanced presence. The interaction system comprises of a dialogue module, which is interfaced with a speech recognition and synthesis system. Next to speech output, the dialogue system generates face and body motions, which are in turn managed by the virtual human animation layer. Our fast animation engine can handle various types of motions, such as normal key-frame animations, or motions that are generated on-the-fly by adapting previously recorded clips. All these different motions are generated and blended on-line, resulting in a flexible and realistic animation. Our robust rendering method operates in accordance with the previous animation layer, based on an extended for virtual humans precomputed radiance transfer (PRT) illumination model, resulting in a realistic display of such interactive virtual characters in mixed reality environments. Finally, we present a scenario that illustrates the interplay and application of our methods, glued under a unique framework for presence and interaction in MR},   
keywords={avatars;computer animation;interactive systems;dialogue system;interaction system;interactive mixed reality framework;interactive virtual character;precomputed radiance transfer illumination model;real-time interaction;rendering method;speech recognition;speech synthesis;virtual environment;virtual human animation;Engines;Face;Facial animation;Humans;Lighting;Robustness;Speech recognition;Speech synthesis;Virtual environment;Virtual reality},   
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**Bibliography**

In this paper, a proposal on a simple and robust mixed reality (MR) framework has been made. This feature allows for real-time interaction with virtual humans in real and virtual environments under consistent illumination using the mixed reality. In this system, we look at three major things. Namely - interaction, animation and global illumination of virtual humans. The interaction system contains few great features like dialogue module, which is interfaced with a speech recognition and synthesis system. In addition to speech output, the dialogue system generates face and body motions. These are managed by the virtual human animation layer.

All the different motions are generated and blended on-line that would result in a flexible and realistic animation. The robust rendering method implemented in the system operates in accordance with the previous animation layer. This is based on an extended for virtual humans precomputed radiance transfer (PRT) illumination model. This would result in a realistic display of an interactive virtual model in mixed reality environments.

**References:**

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* <http://ieeexplore.ieee.org.libproxy.uml.edu/document/4030841/>
* UML Library guides

"This is entirely my own work, except as disclosed in the documentation. I gave help to the following persons:  
None  
Signed Kiran C Shettar"