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Date / Termin: Wednesday / Mittwoch 04.09.2024 · 15:00 – 15:45 Uhr

Room / Raum: 403

Format: Presentation / Vortrag



Enhancing User Engagement in AR/VR Training with Intelligent Virtual Agents and Gamification

Immersive technology (AR/VR) enables seamless 3D communication between physically distant users. In immersive environments, users interact not only with each other in the form of avatars but also often with computer controlled virtual agents for engaging social experiences. Using advanced technologies such as natural language processing and artificial intelligence (AI), virtual agents can offer natural and human like user interaction. This has the potential to revolutionize traditional training methods, providing a dynamic experience that increases user engagement and skill acquisition.

Intelligent Virtual Agents (IVA) can enhance AR/VR training by acting as interactive guides, mentors, or peers. They can adapt to users' learning styles, provide real-time feedback, and personalize challenges based on the learner's progress and performance. This can create a tailored learning environment for each user and foster a sense of social connectedness. An IVA can also act as a placeholder for a missing user in a multi-user environment. This allows for asynchronous collaboration between users and resolves scheduling conflicts. The experience can be further enhanced by training the IVA to mimic the behavior of the missing user in the collaboration. By mimicking their behavior, rather than acting as a generic placeholder agent, it can help to maintain the level of familiarity that users experience when interacting with each other.

It is well known that adding gamification to training modules can transform mundane tasks into interactive challenges. In shared experiences such as training with peers, gamification can not only make the learning process fun but also add a layer of competition and achievement that further motivates learners. IVAs can play a key role in mediating such trainings. In addition, placeholder IVAs can allow users to participate asynchronously at their own convenience without being dependent on others. This presentation discusses the current state of research in the context of immersive pedagogical techniques and advocates a holistic approach that leverages the advantages of IVAs and gamification in AR/VR training.

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