

Graduate School of Science and Technology Master’s Thesis Abstract

Laboratory name (Supervisor)	Interactive Media Design (Hirokazu Kato (Professor))		
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Thesis title	Learning Context-Aware Gaze Behavior inVirtual Reality: An Evaluation of an LLM-Driven Conversational Agent Training System		
Abstract			
Effective gaze behavior is a fundamental, yet often challenging, aspect of suc- cessful interpersonal communication. While crucial for conveying engagement and rapport, difficulties with appropriate eye contact can stem from personality traits such as introversion. Traditional virtual reality (VR) training systems have shown promise in improving gaze behavior by providing controlled practice en- vironments. However, a significant limitation of these systems is their reliance on pre-scripted dialogues and static gaze guidelines, which fail to capture the dynamic and context-dependent nature of real-world conversations. This thesis introduces and evaluates a novel VR gaze behavior training system that addresses this limitation by integrating Large Language Model (LLM) con- versational agents. These LLMs enable allows for dynamic adaptation of gaze guidelines based on the ongoing conversational context. A VR prototype was developed, incorporating both static and dynamic gaze guideline conditions. A user study was conducted with 28 participants using a between-subjects design. Results from objective gaze metrics demonstrated that both static and dynamic guidelines increased total dwell time and gaze ratio towards the conversational agent’s face. Crucially, the dynamic guidelines fostered more nuanced and natural gaze patterns. Subjective feedback further reinforced the system’s effectiveness also reported a generally positive overall experience, with a preference for the dynamic condition. This research advances VR-based social skills training by offering a more realistic, adaptive, and ultimately more impactful approach to developing gaze behavior and communication skills.			