

GAME: GrAspable Media Entertainment

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Abstract

This research explores the development of a Tangible User Interface (TUI) designed for gaming purposes. GAME (GrAspable Media Entertainment) is an innovative project that enables users to physically interact with digital gaming elements, bridging the gap between the physical and virtual worlds. This is achieved through the integration of multiple technologies, including a motion capture system (Optitrack), a short-throw projector (Optoma UHD35STx), and an agent-based simulation software (GAMA). GAME supports interactive gameplay (e.g., Player vs. Player, Player vs. AI), offering a more immersive and versatile gaming experience than conventional screen-based implementations. Furthermore, GAME leverages blockchain technology, specifically the Ripple protocol (i.e., XRPL), to facilitate gameplay actions such as store progress checkpoints, secure in-game transactions, and track player scores. The addition of the blockchain component allows easy game customization, and enhances the overall gaming experience. Finally, by combining these technologies (e.g., tangible user interfaces and blockchain technology), we propose a novel tangible interaction method that can pave the way for future developments in important fields such as education, training, and entertainment.

Additional material

GitHub Repository w/ Demo Video: <https://github.com/IE-Robotics-Lab/GAME>