troglo-

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inspiration

The prefix troglo-, meaning “cave-dwelling,” is used in scientific contexts to form words like troglobite. Troglobites are small creatures that have adapted to a permanent life in a cave. They are so well-adapted to life in a cave that they would be unable to survive in the surface environment. To survive in the darkness, troglobites have highly-developed senses of hearing, touch and smell.

abstract

Users of troglo- will also be bound to a cave environment, specifically the CAVE2. While the darkness of the cave eliminates troglobites need for sight, users will depend on VR headsets to explore and interact with each other. Essentially, this project incorporates multiplayer mobile VR in a tracked environment. Most VR applications are meant for a single user, and until recently tracking wasn’t involved. I want users to share a VR experience in the same room, and see what interesting observations can be made. The primary goal is to implement this hybrid platform, and then to create several scenes to highlight tracked multiplayer mobile VR.

hardware

Each user will wear a Google Cardboard VR headset. These headsets will be individually tracked (through the CAVE2 tracking system), and synced across all users, creating a multiplayer experience. Users will also need an Android device. To help with performance and show the audience what the users are experiencing, the server will be on a laptop, within a GUI showing the virtual worlds and tracked users from various perspectives.

software

This project will be implemented within Unity 2017. The Google VR SDK will be incorporated to work with Google Cardboard. The omicron-unity package will be used to receive relative tracking information for each headset.

links

https://www.youtube.com/watch?v=NGtzSd3wFY4

https://developers.google.com/vr/unity/

https://vr.google.com/cardboard/

https://github.com/uic-evl/omicron-unity