Exploring New Forms of Social Media in Virtual Reality

Project IGR205

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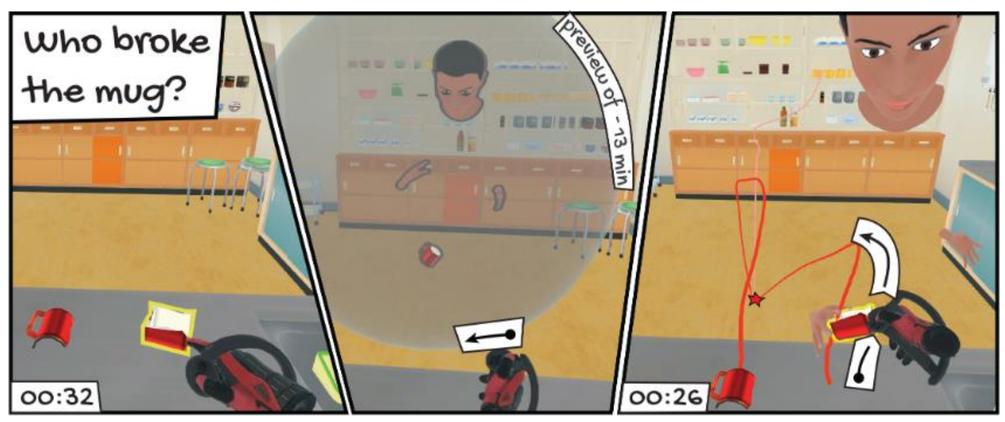
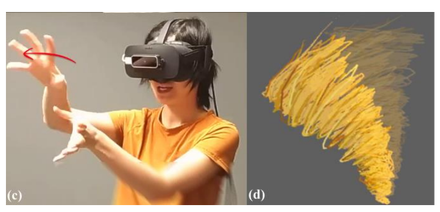
[1] Oculus Quill https://quill.fb.com/

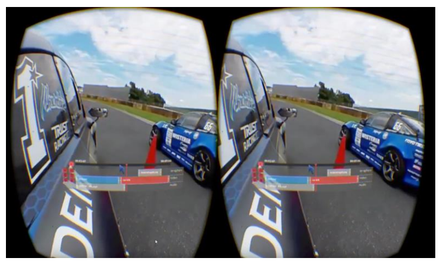


[2] Who put that there? https://youtu.be/KlKw6ryRT_o

Examples/Sources:



[3] MagicalHands
https://youtu.be/YOJVYCQeXFs



[4] Vremiere
https://youtu.be/S1lblwrv2X0

References:

[1] Oculus Quill

[2] Klemen Lilija, Henning Pohl, and Kasper Hornbæk. 2020. Who Put That There? Temporal Navigation of Spatial Recordings by Direct Manipulation. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–11. DOI:https://doi.org/10.1145/3313831.3376604

[3] Rahul Arora, Rubaiat Habib Kazi, Danny M. Kaufman, Wilmot Li, and Karan Singh. 2019. MagicalHands: Mid-Air Hand Gestures for Animating in VR. In Proceedings of the 32nd Annual ACM Symposium on User Interface Software and Technology (UIST '19). Association for Computing Machinery, New York, NY, USA, 463–477. DOI:https://doi.org/10.1145/3332165.3347942

[4] Cuong Nguyen, Stephen DiVerdi, Aaron Hertzmann, and Feng Liu. 2017. Vremiere: In-Headset Virtual Reality Video Editing. In Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems (CHI '17). Association for Computing Machinery, New York, NY, USA, 5428–5438. DOI:https://doi.org/10.1145/3025453.3025675

Description

The way we create, exchange, and share information on social media changes rapidly, and the material of social media varies from text (Twitter), image (Instagram), and video (TikTok). The current social media are mostly restricted by the 2D display (e.g., smartphone, tablet, or PC monitor). Through Virtual Reality (VR), user can immerse themselves in the simulated environment. If VR becomes a new platform of social media, what content we are able to create, and how we share these contents to other users?

Oculus Quill [1] is a platform that allows VR user to create and share animation. In HCI research, prior work has implemented tools for creating materials like a clip of VR experience [2], animation [3], or 360° video [4]. However, these applications have yet become the main stream of social media in VR because some of them were still aiming for expert user. Using VR as social media should be as easy as posting a picture on Instagram or uploading a video on TikTok. In this project, our goal is to design and implement an application that can easily create content during VR experience and share to other VR users.

Goal

The goal of this project is to design and implement interaction and interface around *creating and sharing* contents on the VR platform, which can be one of the future forms of social media. Students are encouraged to think outside the box and forget traditional interface of social media (e.g. what if we could share a clip of VR experience, or what if we would record a series of motions in a VR game?). In a first step, each group will receive one Oculus Quest and will design and develop their novel form of social media in VR. In a second step, the students will implement their idea using Unity3D and the Oculus SDK. The last step, consists of implementing an application (e.g. a simple game) that leverages and showcases this novel type of interaction. Each group is expected to meet once a week with their supervisor and discuss their ideas and the direction of the project. Each student will get an Oculus Quest to be able to develop individually. Due to the complex implementation requirement students should have some prior knowledge in C# and ideally Unity development.

Prerequisite

- Object Oriented Programming (e.g. Java, C++, C#)
- Basic understanding of Computer Graphics
- Basic understanding of Human-Computer Interaction (HCI) Methods
- (optional) First experiences working with 3D Game Engines (e.g. Unity3D, UnrealEngine)

Acquired skills

- Being able to apply a research driven design process for HCI projects.
- Being able to develop VR applications in Unity3D
- Being able to use the Oculus Rift SDK
- Understanding the spatial paradigm behind Augmented and Virtual Reality
- Outstanding projects will have the option to contributing to a scientific publication at a top tier HCI Conference (e.g., ACM CHI, ACM UIST)

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