CollaboVR: A Reconfigurable Framework for Creative Collaboration in Virtual Reality

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The best layout and interaction mode?
Research Questions:

- **Design:** What if we could bring sketching to real-time collaboration in VR?

- **Design + Evaluation:** If we can convert raw sketches into interactive animations, will it improve the performance of remote collaboration?

- **Evaluation:** Are there best user arrangements or input modes for different use cases, or is it more a question of personal preferences?
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(a) Discussing travel schedules in *integrated layout* with remote participants.
(b) Presenting the topic of four dimensional shapes in *mirrored layout*.
(c) Sketching a baroque pattern in *projective layout* to remote users.
(d) Collaborative design session of furniture and apartment arrangements.
CollaboVR

Chalktalk (Cloud App)

Audio Communication

Layout Reconfiguration
User Arrangements
(1) side-by-side
(2) face-to-face
(3) hybrid

Input Modes
(1) direct
(2) projection
User Arrangements
(1) side-by-side
User Arrangements

(1) side-by-side
(2) face-to-face
User Arrangements
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Input modes

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Layout Reconfiguration

Input Modes
(1) direct
(2) projection
C1: Integrated Layout

C2: Mirrored Layout

C3: Projective Layout
C1: Integrated Layout

C2: Mirrored Layout

C3: Projective Layout

user 1

user 2 observed by user 1
Evaluation

Overview of subjective feedback on CollaboVR
Evaluation

(a) Performance

(b) Easy to Use

Condition: C1, C2, C3

* Significant difference
** Highly significant difference
Evaluation
Takeaways

1. Developing CollaboVR, a reconfigurable end-to-end collaboration system.
2. Designing custom configurations for real-time user arrangements and input modes.
3. Quantitative and qualitative evaluation of CollaboVR.
more live demos...
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