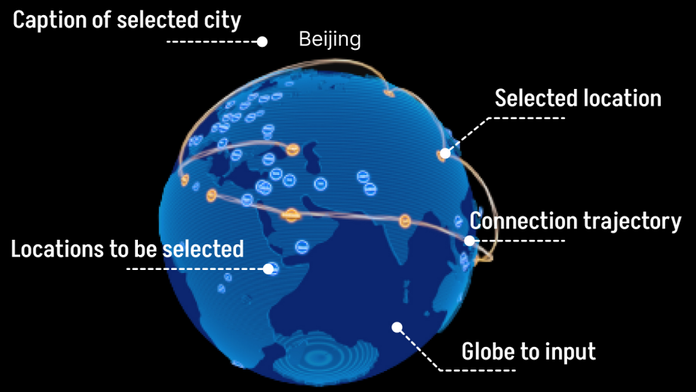
# Pathword: A 3D Identity Authentication Interface Based on Connection Trajectory

Han Yang  Yuxuan Fan  Yanning Jin  Haopai Shi  Tiemeng Li

**VIS & HCI Research Group / Beijing University of Posts and Telecommunications**

## The Interface of Pathword



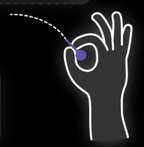

The Pathword system places the globe in a fixed position in space, with 50 countries and 50 cities represented. Country and city levels can be interchanged. The user can freely select locations, which will then be connected sequentially into a trajectory, which serves as the key for unlocking the VR device.

## Gesture Interactions

Pinch with left hand to rotate

Users can make a pinch gesture with their left hand anywhere in the space to activate the globe widget at the fingertip to rotate the earth.

The user can select objects by making a pinch gesture, observe the selecting process through the pointer and fishing line shot by the finger and cancel the selection by selecting the same places twice.



Pinch with right hand to select

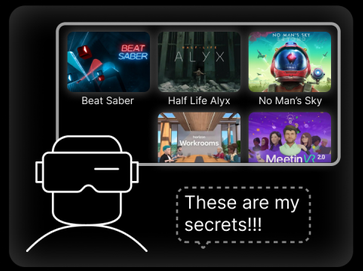
Grab with left hand to switch

During the input process, the user can switch between city and country by making a grab gesture towards the sphere with left hand.

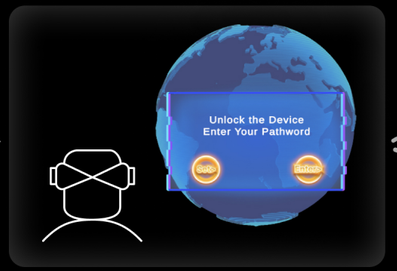
Once a selection has been completed, the user may confirm its completion by making a thumbs-up gesture with their right hand.

Thumbsup with right hand to confirm

## The Process of Authentication



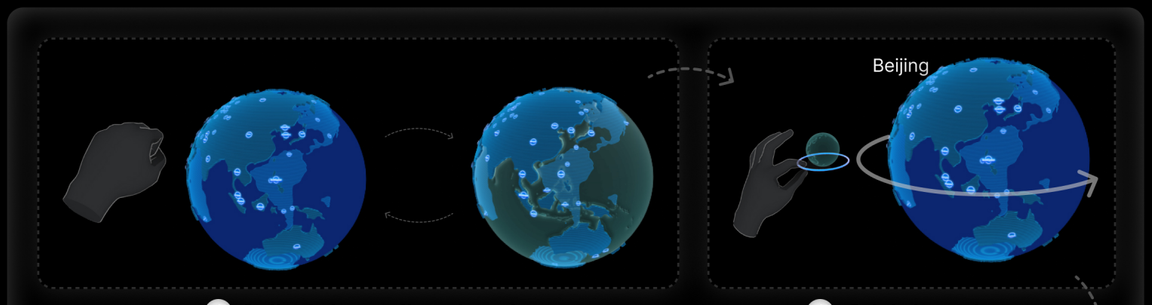

Protect privacy in users' devices




1 Enter the VR device

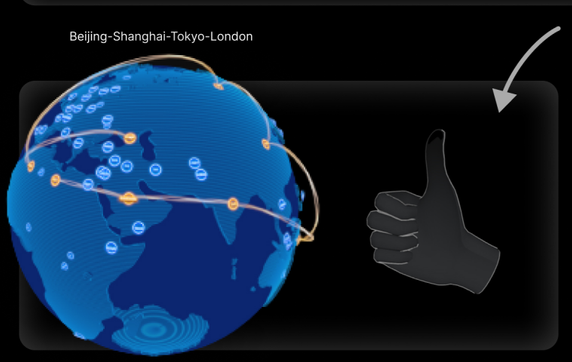

Follow the animation tutorial


Usage scenarios




2 Switch between city and country

3 Rotate the globe




4 Confirm the input


5 Select the locations

Input process