Control with Vergence Eye Movement in Augmented Reality See-Through Vision

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➢ Motivation & Key Idea

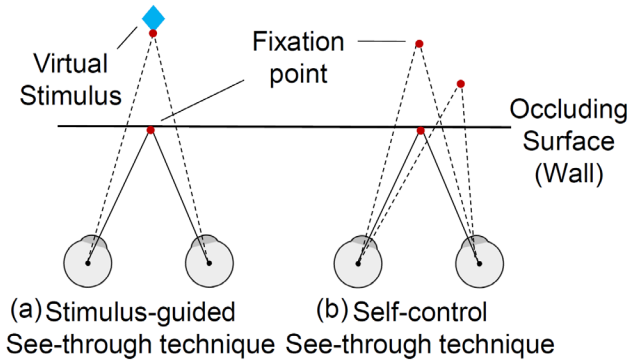
- Most existing works only used common modalities to control the display for see-through vision, e.g., button clicking and speech control. It distracts the user and degrades the user experience.
- We propose a novel interaction method using vergence eye movement for controlling see-through vision in AR.

➢ Methods

Gaze Depth Estimation

- Use 3D eye model to calculate pupil position
- Unifying the coordinate system of two eye cameras
- Fitting the pupil distance to depth information

Two techniques of Controlling with Gaze Vergence



➢ Results

- This research proposes a novel interaction using vergence eye movement to control see-through vision in AR. With our depth estimation algorithm, fixation depth can be computed from the vergence, and used to control the see-through vision.