Eye tracking in VR for active participants

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In VR, we can set up experiments where participants can actively interact in the simulated environment, which has opened an opportunity to test hypotheses in more natural conditions. With active test subjects in VR, we must contend with noisy oculomotor signals due to natural head and body movements that can affect the data quality. In this workshop, we will start with a gentle introduction to setting up an experiment in VR and how to ensure high data quality. We will see the types of data collected and how to preprocess it. We will work with actual eye-tracking data collected in VR from two experiments, one with standing and naturally moving participants and the other with seated mostly stationary participants. We will compare the data of the two experiments, possible fixation detection methods, and some preprocessing techniques.

Keywords

Mobile eye-tracking, virtual reality, active participants

Prerequisites

Participants should have beginner/intermediate knowledge of Python.

Course Schedule (September 11th-12th, 14:00h – 17:00 CET)

Day 1 (Saturday, Sep 11th)		Day 2 (Sunday, Sep 12th)	
14:00	Welcome Day 1 - Introductions	14:00	Welcome Day 2 – recap of day 1
14:30	Eye-tracking in VR: experiment setup	14:15	Introduction to 2 VR experiments
15:00	VR Coordinate systems, colliders, and ray-casting	14:45	Demo of the data quality & preprocessing (1h)
15:30	Break		Break
15:45	Experiment data recording: data types and formats	16:00	Group Practice Session
16:30	Discussion - Q/A	16:30	Discussion
17:00	End of day	17:30	Farewell

Maximum Intake

Maximum number of participants: 15

Additional requirements

Participants should have a microphone and camera as the workshop will be interactive.