# Using Gaze to Predict Walking Behavior

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## Motivation

Precise path prediction can be used in redirected walking and automated level design.

Current prediction algorithms are not precise enough to prevent resetting and manipulations above perception thresholds.

## Solution

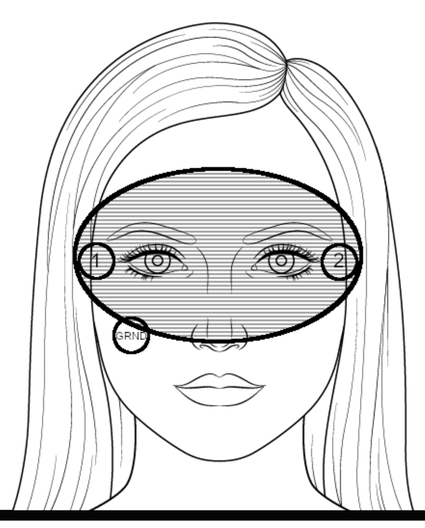
Include eye tracking data in path prediction algorithms to achieve better walking path predictions.

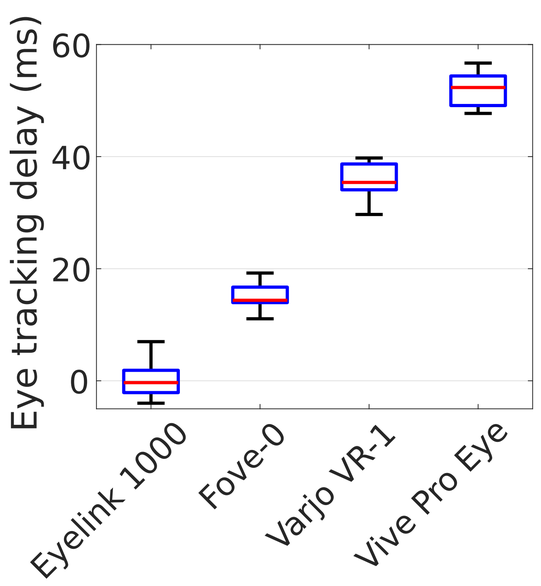
## Eye Tracker Evaluation

For realtime path prediction, gaze data needs to be computed quickly.

How fast are current VR eye trackers?

Eye tracking delay and latency were measured using simultaneous electrooculography (EOG).




## Eye Movements during Walking

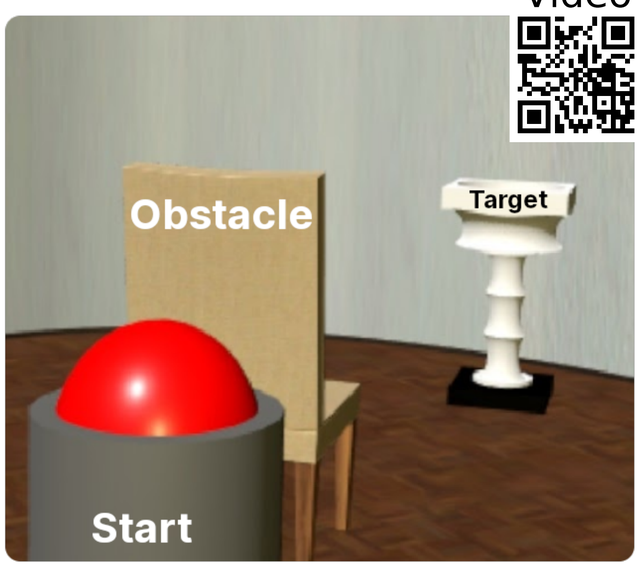
16 subjects in 3 different tasks

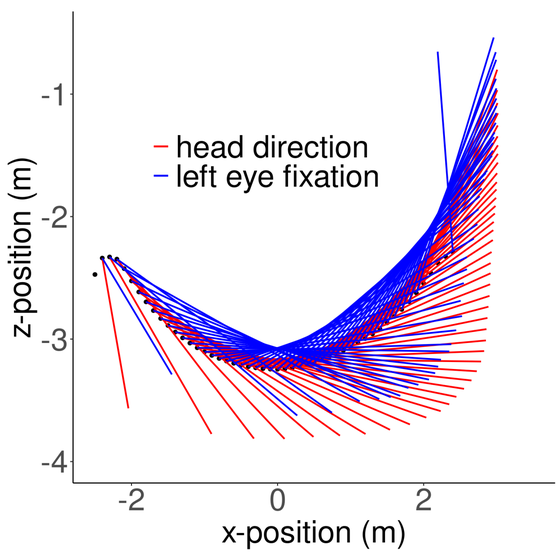
1) Walking in a curve

2) Approaching targets vs avoiding obstacles

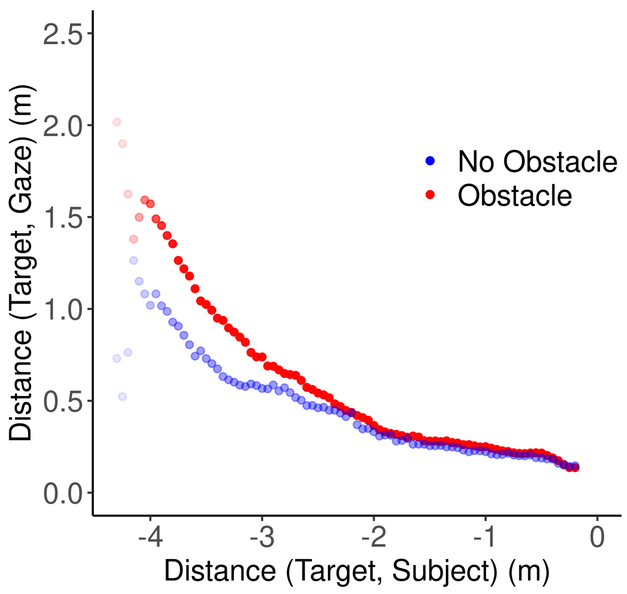
3) Random search task (egg hunt)

Video




Gaze direction precedes head direction in a curve




Fixation positions distinguish approaching vs avoiding

## Future Work

Include segmented eye tracking data in

- LSTM based path prediction models

- existing redirection controllers

Comparing the resulting predictions with already existing algorithms in the random search task.

Extended Abstract