

Videobasiertes Eyetracking



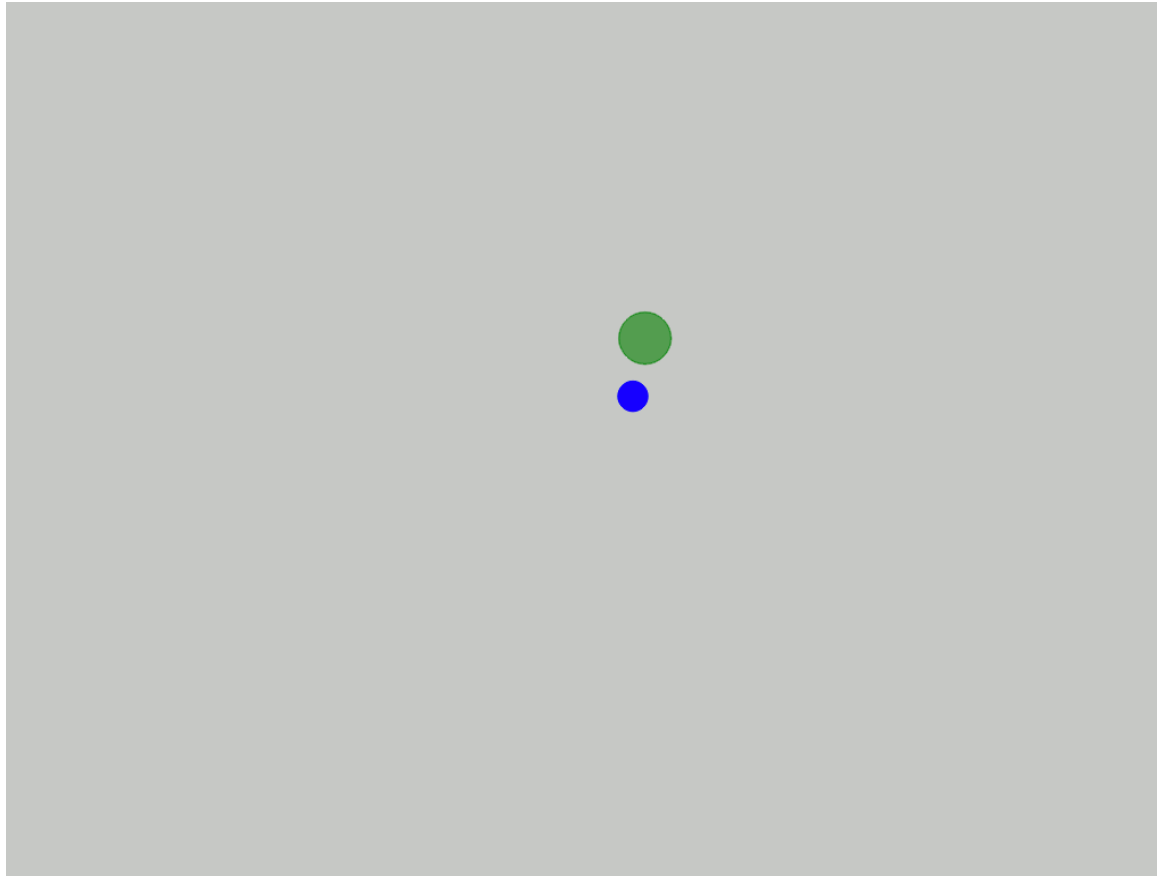
Messablauf

Die Probanden mussten einen Punkt auf dem Bildschirm mit den Augen verfolgen:

1. « Liegende Acht » langsam ($T = 8 \text{ s}$)
 - i. Probedurchlauf (1 cycle)
 - ii. Messung 1 (2 cycles)
 - iii. Messung 2 (2 cycles)
2. « Liegende Acht » schnell ($T = 4 \text{ s}$)
 - i. Probedurchlauf (1 cycle)
 - ii. Messung 1 (2 cycles)
 - iii. Messung 2 (2 cycles)
3. Horizontal ($T = 4 \text{ s}$; kein Probedurchlauf)
 - i. Messung 1 (2 cycles)
 - ii. Messung 2 (2 cycles)

Smoothpursuit: Langsame Augenfolgebewegung

Beispiel: „Liegende Acht“; blau: Target; grün: Blickbewegung



Datenbeschreibung

- Eyetracking-Daten aus einem Kooperationsprojekt zur Früherkennung von Leseproblemen
- 134 Datensätze
- Sampling rate: 250 Hz
- Pro Datensatz zwei Textdateien:
 - vp_xyz.txt: Zeitstempel des Eyetrackers + Position des Targets auf dem Bildschirm
 - vp_xyz_gaze.txt: Zeitstempel des Eyetrackers + Position des Blicks auf dem Bildschirm
- Anhand der Eyetracker-Zeitstempel können Targetposition (Soll-Position) und Blickposition (Ist-Position) zueinander in Beziehung gesetzt werden

Targetinfos: vp_xyz.txt

```
t_Tracker;t_soll;t_ist;pix_x;pix_y;deg_x;deg_y  
2036600294;0.0166622499133;0.0165042826557;2.94463069484;-2.94437855487;0.0806453988395;-0.0814935985114  
2036615319;0.033166532569;0.0331971527048;5.86233577662;-5.86034695405;0.160553378617;-0.162200869525  
2036633330;0.0498594026182;0.0497386396892;8.81538762936;-8.80862944829;0.241429409991;-0.243802520062  
2036648335;0.0664008896025;0.0663959090598;11.7446443024;-11.7286767261;0.321653756328;-0.324622685018
```

t_Tracker: Zeitstempel Eyetracker

t_soll, t_ist: ignorieren

pix_x: x-Koordinate des Targets

pix_y: y-Koordinate des Targets

deg_x, deg_y: ignorieren

Blickinfos: vp_xyz_gaze.txt

```
2034520576 689.430279511 482.219198954 3.45191438838 -80.5340658091 -33.5947227011 572.119565334 670.861037038 499.194125429
2034524577 690.340879844 482.478937791 3.4558607028 -80.4994949246 -33.5905607818 571.882687132 673.217534597 499.802317541
2034525939 PURSUIT:Cycles=1:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
PURSUIT_FINISHED:Cycles=1:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=line_linear:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=line_line...
PURSUIT:Cycles=2:Trajectory=line_linear:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=line_line...
STOP:PursuitTask
```

- 13 Spalten (s.o.):
 - Spalte 1: Zeitstempel Eyetracker
 - Spalte 2-7: linkes Auge:
 - Blickpos. x
 - Blickpos. y
 - Pupillengroesse (ignorieren)
 - Pos Auge x vor dem Eyetracker(ignorieren)
 - Pos Auge y vor dem Eyetracker (ignorieren)
 - Pos Entfernung Auge vom Eyetracker (ignorieren)
 - Spalte 8-13: rechtes Auge
 - s. linkes Auge
- Die Marker zur Kennzeichnung der Aufgabe sind in den Datenstrom integriert (s. rechts)

```
START:PursuitTask
PURSUIT:Cycles=1:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
PURSUIT_FINISHED:Cycles=1:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=8
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=lying_eight:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=lying_eig...
PURSUIT:Cycles=2:Trajectory=line_linear:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=line_line...
PURSUIT:Cycles=2:Trajectory=line_linear:T=4
Fixcross
Cycle:1:START
Cycle:1:STOP
Cycle:2:START
Cycle:2:STOP
PURSUIT_FINISHED:Cycles=2:Trajectory=line_line...
STOP:PursuitTask
```