Scripts

Freitag, 1. September 2017   10:11

Unity
Seahaven

Script	Important Variables
VRTK_Touchpad walking	• Footstep sounds • Walking speed
VRTK_headset Collision	• Ignore Target with Tag X
Pupil Gaze Tracker	• Pupilrecording • EyesOpen • RayDistance • Server IP • Service Port • trainingStarted
PupilCalibMarker	• Points for validation
EyeGazeRenderer	• _image.enabled
recorder	• IsRec • VPNum (counts automatically, only specify when needed)
Screenshot	• My Camera • ResWidthN • resHightN
Auto Intensity	• Day rotate speed • All other parameters you want to play with
(ShowMap)	Not in Seahven 2.0

Commands: To be used during a session

Key	Effect	Associated Script(s)
R	Start/Stop pupil data recording	PupilGazeTracker
C	Start Calibration (17 points, whole field)	PupilCalibMarker -> PupilGazeTracker
V	Start 2D Validation (9 points, central)	PupilCalibMarker -> PupilGazeTracker
D	Start 3D Validation (9 points, central)	PupilCalibMarker -> PupilGazeTracker
S	Stop Callibration & Validation	PupilCalibMarker -> PupilGazeTracker
Q	Stop all recordings, save them and quit game	PupilGazeTracker, recorder
T	Start VR Training -> stat pupil recording + Imoty recording, transform position to start position	PupilGazeTracker -> recorder
F	Fast validation with one point	PupilGazeTracker -> recorder
P	Pause the session and all recordings	PupilGazeTracker -> recorder

DrawViewingPath:

Script	Important Variables
DrawViewingPath *	• Randomize • VPNum • RayDistance
Draw All Paths	Generates all ViewedHouses Scripts of the *NumAnalyze* first recordings in your folder subjetcs in your recording folder (Don't do too many at once, it takes a while)

Recordings:

File Name	Data	Script
EyesOnScreen_VP#	Variable: Gazes = 2D coordinates of gaze (normalized) =(CenterX,CenterY) or (0.000000, 0.000000)	PupilGazeTracker
EyeBoxPos_VP#	Variable: BoxPos = 3D coordinates of box position	PupilGazeTracker
Positions_VP#	(x,y,z,rx,ry,rz,timestamp (in sec),PupilTimeStamp)	Recorder
Validation2D+Num	Degree of error for each point + avg + time + last cal + error in x and y dir (+avg)	PupilGazeTracker
Validation3D+Num	Degree of error for each point + avg + time + last cal	PupilGazeTracker
(MapViews)	Duration of each time the map was looked at	ShowMap
ViewedHouses_VP#	HouseViewed, distance, timestamp (sec. since start)	DrawViewingPath
Heatmap3D(Random Gaze/RandomPos)_VP#	List of (x,y,distance) of fixations during the session	DrawViewingPath

• ViewedHouses:
   House# -> House was looked at
   NH -> No house was looked at
   Distance =
      0 -> Low confidence (<0.5)
      200 -> No object hit (eg: sky)
      D -> House/obj. hit

The top 6 recordings are being automatically made during a session (MapViews are currently not used since there is no minimap in the experimental setup). To create Viewed houses and heatmap data open the Unity project 'DrawViewingPath', put in the VP number of the subject of interest into the respective field in the inspector and press play. After some calculation time you will be able to walk through the 3D city model and see all Gaze hit points. The two .txt files with the recordings have been created automatically. Additionally there are two checkboxes where you can pick a randomization (position or gaze randomization).

Matlab: (for new data format of Seahaven 2.0)
All important variables can be set on the top of each sript. Outputs are automatically saved. Make sure to have all the files named in the column 'Input' in the folder which you access with the respective MATLAB script. If you don't have a certain input file you might have to run DrawViewingPath (explained above) or a nother MATLAB script first. Check the 'Output' column to see which output is created by which script.

Script	Input	Variables	Output
ValidationAnalysis	All Validation_VP#_Val#.txt files	• Path: Where should results be saved	• validations: struct with all validation info for all subjects • Prints some overall analysis
PositionAnalysis	Positions_VP#.txt	• sourcepath	• Map_VP_#.mat • North_VP_#.mat • Path_VP_#.mat
Analysis_Map	• Path_VP_# • North_VP_# • (map_VP_#)	• savepath	• OverlaidMap.jpeg • IndividualNorth.jpeg • SubjectHeatmap.jpeg (save images manually) • Repeated measurements Path comparison
Heatmap3D	3DHeatmap(RandomX)_VP#.txt	• VPNum	• Heatmap (.jpeg)

		• Condition • Savepath	• .mat file of x,y,d,c (c=density at point)
AnalyzeAllViews	ViewedHouses_VP	• savepath	• TimeLine (.jpeg) • NumViewsD (.mat)
Analysis_ViewedHouses	NumViewsD.mat	• PartList • savepath	• TotalNum{VPRange}.mat • ViewingStats{VPRange}.mat
PerformanceAnalysis	ViewedHouses_VP#.txt AlignmentVR_SubjNo_#.mat	• Dname: directory of viewed houses	- Plot for Performance vs. viewing time/distance/d.variance
GazeStandVSWalk	• EyesOnScreen_VP#.txt • Positions_VP#.txt	• PartList • sourcepath	• GazeWalkStand{VPRange} (.jpeg) • Variances{VPRange} (.mat)
LeftRightTurns	• EyesOnScreen_VP#.txt • Positions_VP#.txt	• PartList • Sourcepath • IntervalLength • TurnSignificance	• GazeLeftRight{VPRange} (.jpeg) • TtestsLR{VPRange}.mat
Entropy	• ViewedHouses_VP# • AlignmentVR_SubjNo_#.mat	• PartList • SourcPath • Intervallength	• Entropy_IntervalLen_NumSJs(.mat) -> all entropies • Performance_EntropyXsecIntervalYSJs(.jpeg)