

# SightLab VR Pro Experiment Generator & Analytics Suite for Vizard



## Overview

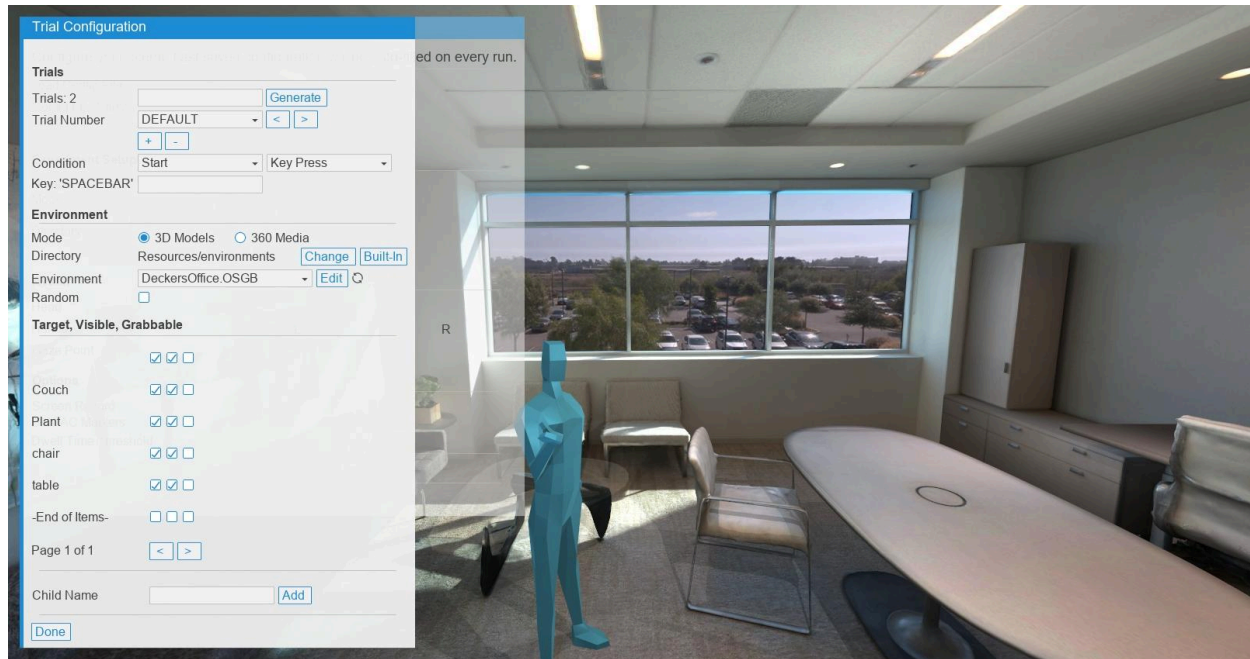
SightLab VR Pro is a simple yet powerful tool for setting up VR experiments with little or no code. It offers comprehensive tools to collect, analyze, and playback sensor data including eye-tracking (fixations, saccades, pupil diameter, dwell time, areas of interest, etc.), body and face tracking, physiological measurements, and more. The interactive playback mode features visualizations like heatmaps, scan paths, interaction data, among other advanced features. With a vast array of templates and tools, SightLab VR Pro provides exceptional insights for research and training purposes.

SightLab VR Pro is compatible with all the major PC based XR devices including the Meta Quest Pro, Varjo HMDs, Vive Focus 3 and Vision, Vive Pro Eye, HP Omnicept, and many more. SightLab VR Pro is an add-on to Vizard and requires an active Vizard Development or Enterprise license, sold separately.

## Key Features:

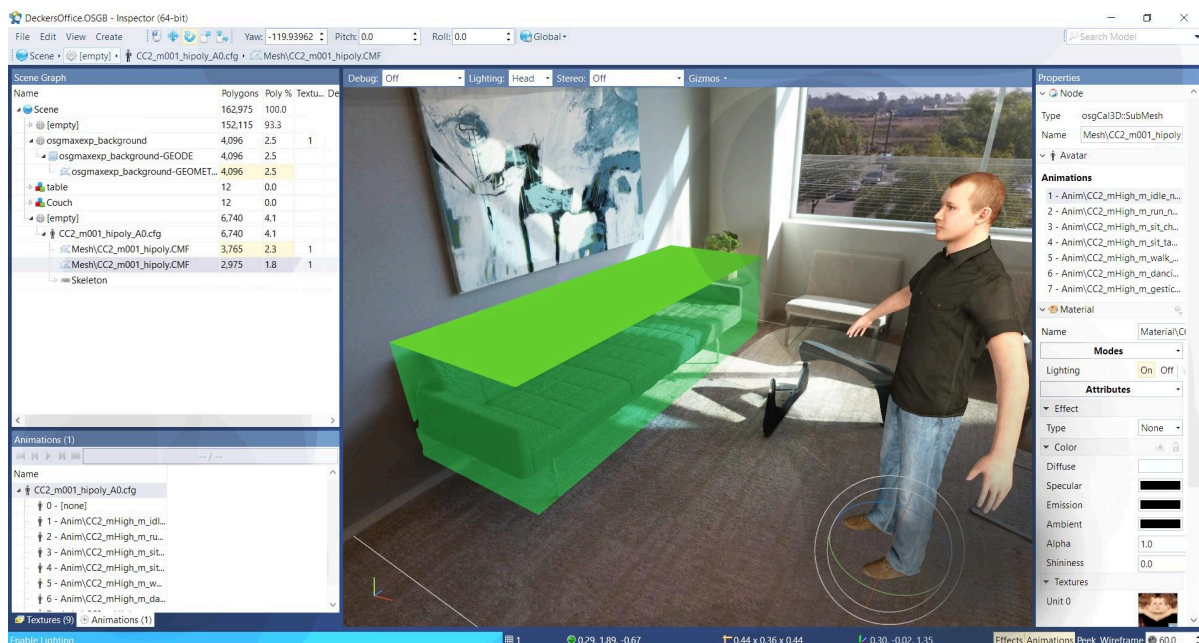
- Utilize a GUI or Python code based interface for setting up a VR experiment, or add to an existing Vizard script
- Add environments, target objects and fixation regions of your choosing
- Record video of experiment for later review
- Add 360 video or images (mono or stereoscopic)
- Adjust parameters such as fixation angle/time, dwell time threshold and more
- Enter participant data
- Display fixations in real time along with a timestamp

## Intuitive and Easy to Use GUI or Leverage Code



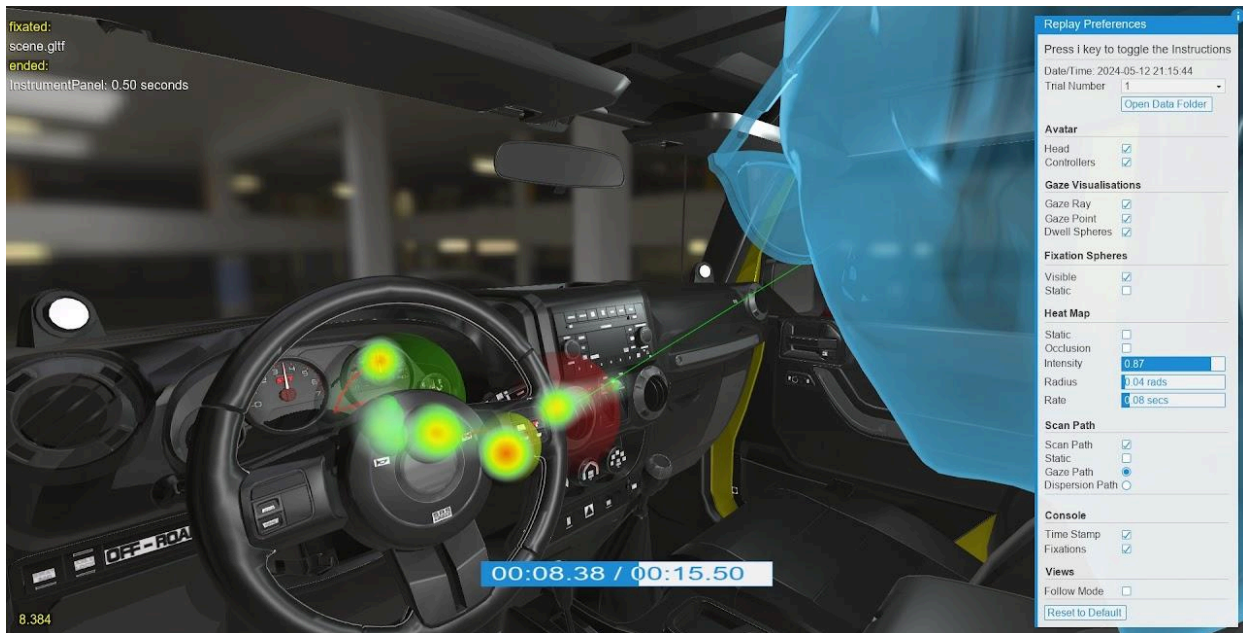
Configure experiments using a simple graphical user interface. No coding required or extend with built in scripting

## Immersive Environment Building



Build and edit 3D models/360 media. Access assets from a wide range of sources such as Sketchfab, 3D modeling programs (Blender, 3DSMax, Solidworks, etc.) , Unity asset store, AI text to 3D, and much more

## Interactive Replay and Analytics



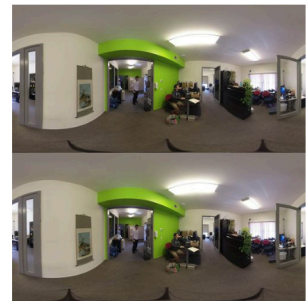
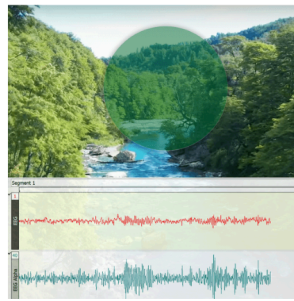
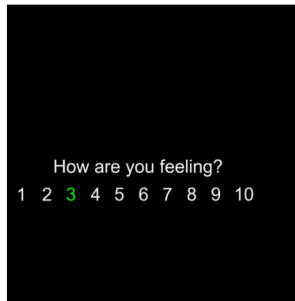
- Record and replay VR sessions with advanced analytics overlays
  - 3D Gaze Path visualization
  - Fixation Spheres
  - Dwell Spheres
  - Gaze Ray and intersect points
  - Heatmaps
  - Avatar Interactions

## Data Collection

- Collect eye tracking data and write to a .csv file with the following parameters
  - Timestamp
  - Individual or combined eye vector
  - Fixations/ Saccades
  - Saccade amplitude, velocity, peak velocity, average amplitude
  - Pupil Diameter (if available)
  - Eye Openness (if available)
  - Any additional sensor data depending on hardware
  - Custom Flags
  - Write stats to file including
    - Views per object, Total view time per object, Average view time per object, timeline
  - Easily Customizable and extendable with access to full source code

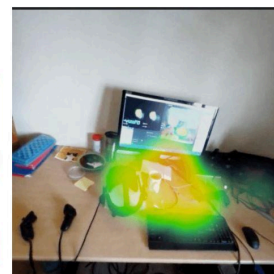
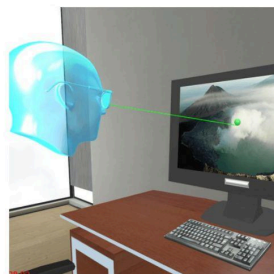
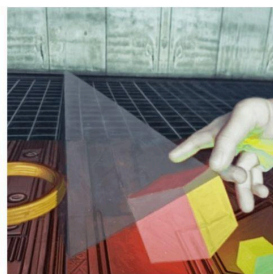
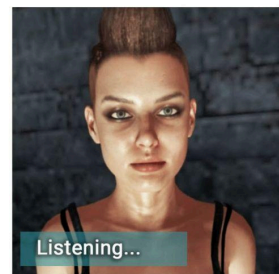
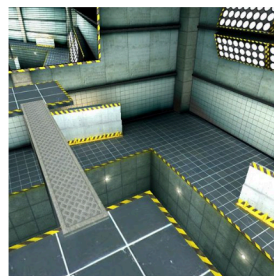
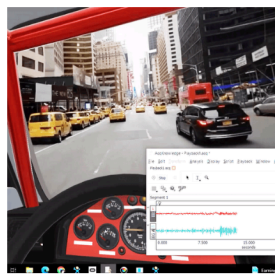


## Customizable Features



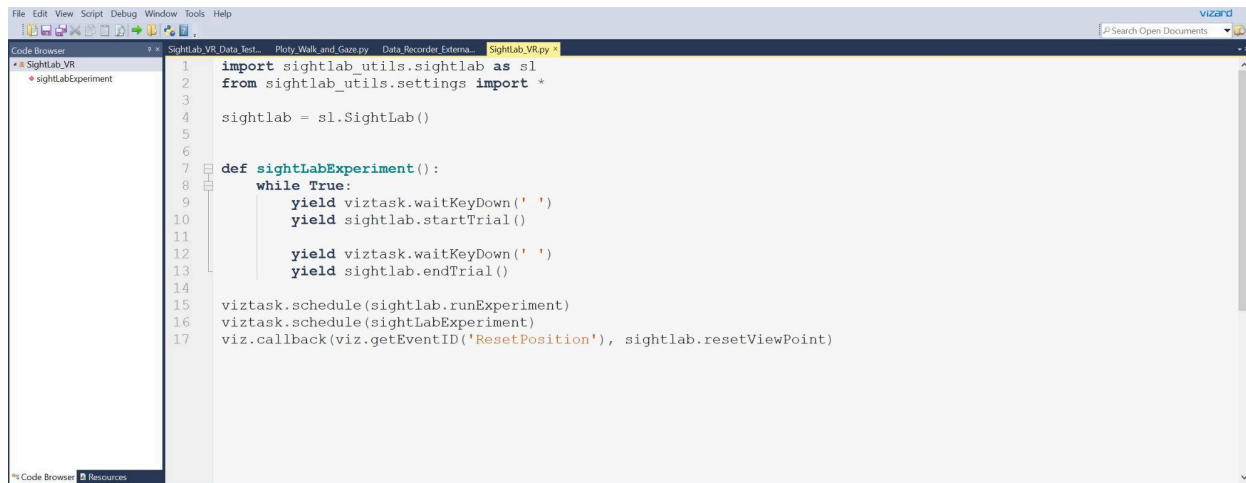
- Add custom flags to synchronize with events in the simulation
- Custom events for gaze based interactions
- Wide selection of graphs, charts and visualizations
- Choose from various avatars
- Add instructions, rating scales, and other common experiment tools
- Expand using python code or add additional python libraries

## Modifiable Experiment Templates



- Leverage a large library of over 100 templates and examples, including Visual Search Tasks, Driving simulations, Augmented Reality, Body Tracking, Face Tracking, Biofeedback, Smooth Pursuit, and much more. See here for full list <https://sightlab2.worldviz.com/exampletemplates/example-scripts>

## Built In Python Editor



```
1 import sightlab_utils.sightlab as sl
2 from sightlab_utils.settings import *
3
4 sightlab = sl.SightLab()
5
6
7 def sightLabExperiment():
8     while True:
9         yield viztask.waitKeyDown(' ')
10        yield sightlab.startTrial()
11
12        yield viztask.waitKeyDown(' ')
13        yield sightlab.endTrial()
14
15 viztask.schedule(sightlab.runExperiment)
16 viztask.schedule(sightLabExperiment)
17 viz.callback(viz.getEventID('ResetPosition'), sightlab.resetViewPoint)
```

Leverage a built in Python editor to add experiment specific built in modules, extended Vizard modules, or add additional Python libraries quickly and easily with the Package Manager for advanced data analysis, machine learning, and more.

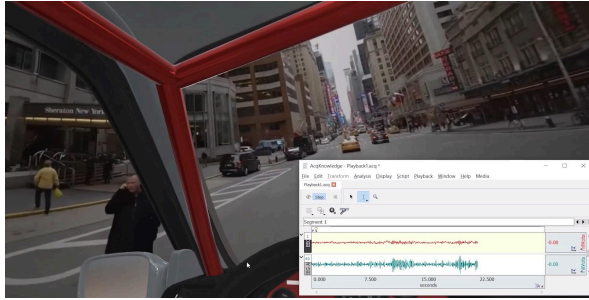
Access a custom SightLab Assistant GPT for quick and easy code creation

## Wide Range of Hardware Support



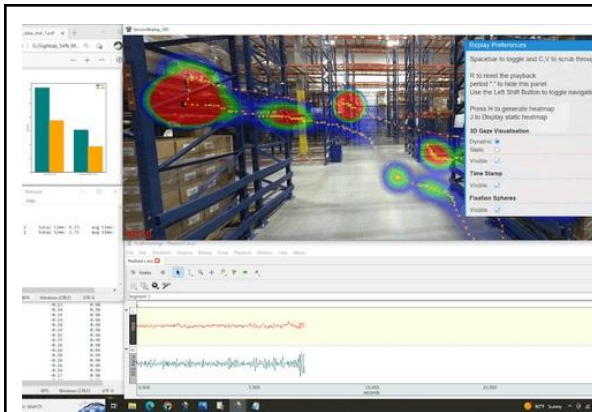
Large selection of hardware support from all PC connected XR headsets, body tracking systems (Optitrack, Vicon, XSens, ViveTrackers, etc.), Data Gloves, EEG, FNIRs, Biopac Physiological measurement devices, Projection systems and much more

## Synchronized Physiological Measures



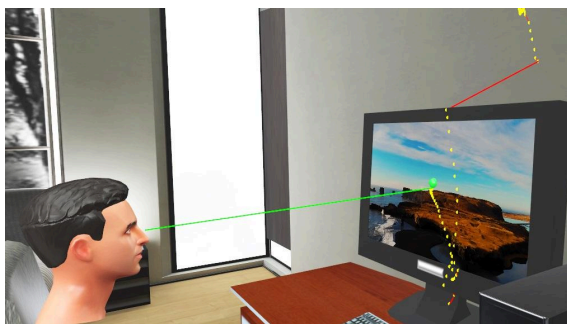
- Add synchronized physiological measures: ECG, RSP, EDA, EEG, fNIRS, etc. Choose the type and number of signals to suit your paradigm (components sold separately)
- Integrate with BIOPAC AcqKnowledge and send markers
- Use physio data for real-time biofeedback
- Import synchronized video replay of session to play alongside physiological measurements
- Synchronize with additional devices using Lab Streaming Layer (such as Brain Vision, ANT Neuro, and more)

## Advanced Experiment Design and Setup



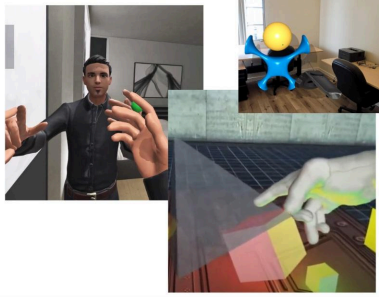
- Modify independent variables
- Data saving and visualizations for analysis of dependent variables
- Save and modify conditions
- Randomize and run blocks of trials
- Experiment flow control and more

## Virtual 2D Screen



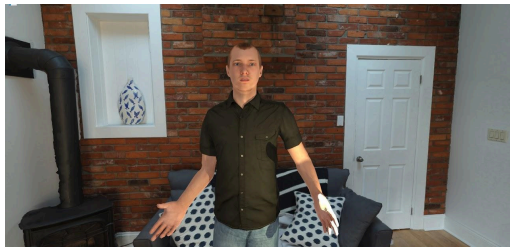
- Bring in a 2D screen of any size for controlled stimulus exposure
- Show videos, images etc.

## Extended XR Features



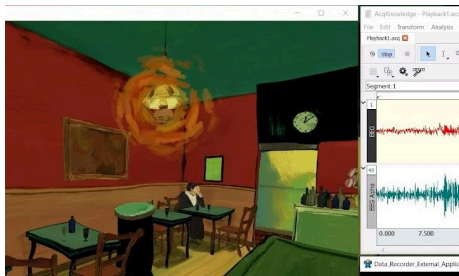
- Face Tracking with 60 points of data
- Hand Tracking
- Upper Body Tracking
- Mixed Reality / Augmented Reality

## AI Enabled Agents



- Dynamic AI powered avatar interaction
- Create dynamic interactions and tag objects for intelligent identification and interactions
- Use text to speech and speech recognition to interact with agents and the scene

## External Application Data Recorder



- Record and save Physio, eye tracking, face tracking and other metrics from any application running on a PC

## Common Experiment Templates



- Choose from Visual Search, Memory Tasks, Phobia/ Stimulus Presentation, Optic Flow, Smooth Pursuit and more



## Multi-User Edition

Access all of the features of SightLab VR Pro with multiple users across local or remote locations



## Technical Specifications

- Hardware Requirements:
  - PC-based XR devices and a Windows PC
- Software Requirements:
  - Requires Vizard Development or Enterprise license (sold separately).

For more information or a SightLab demo,  
contact us:

NEUROSPEC AG  
Stansstadterstrasse 10  
6370 Stans  
Switzerland

E-Mail: [info@neurospec.com](mailto:info@neurospec.com)  
Phone: +41 41 371 07 04