



MODULE

# Eye Tracking Glasses

Understand Natural Visual Attention

Eye Tracking Glasses Module

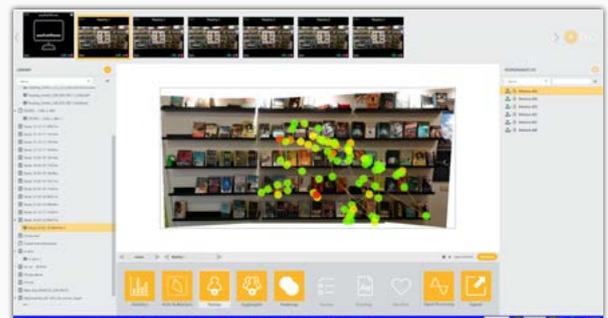
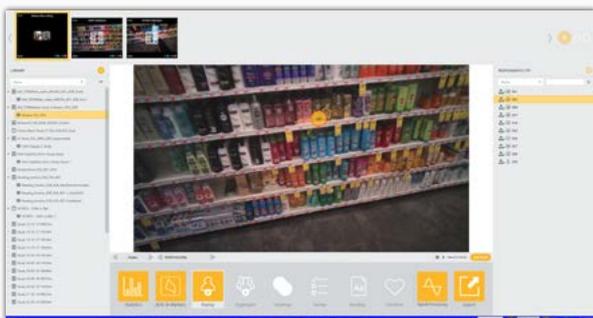
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# Eye Tracking Glasses

## Advanced visual attention research made easy

The Eye Tracking Glasses module enables users to connect, record, and live-visualize data from eye tracking glasses. A full suite of analysis tools are available to advance understanding of human attention.

- Single platform for integrating and implementing eye tracking glasses studies
- Integration with all major eye tracking glasses producers
- Advanced and automated analytic tools for dynamic, real-world stimuli



Watch the video below to see how [Professor Bjarne Bergquist](#) from [Luleå University of technology](#) uses iMotions in his human factors research.

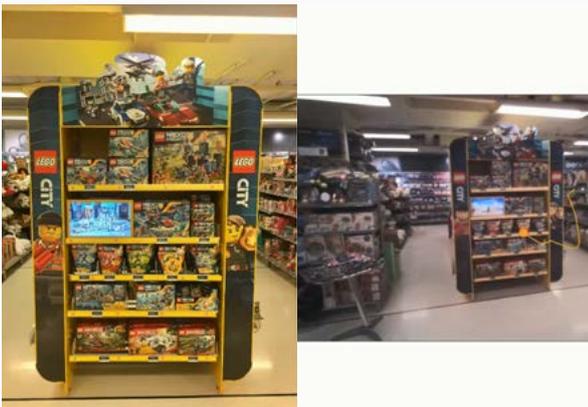


# Eye Tracking Glasses Module Features

## Wearable real-world eye tracking research

### Choice in eye tracking glasses

Eye tracking glasses from the world's leading producers can be either connected and synchronized within iMotions (ASL), or the data post-imported for further analysis (SMI, Pupil Labs).

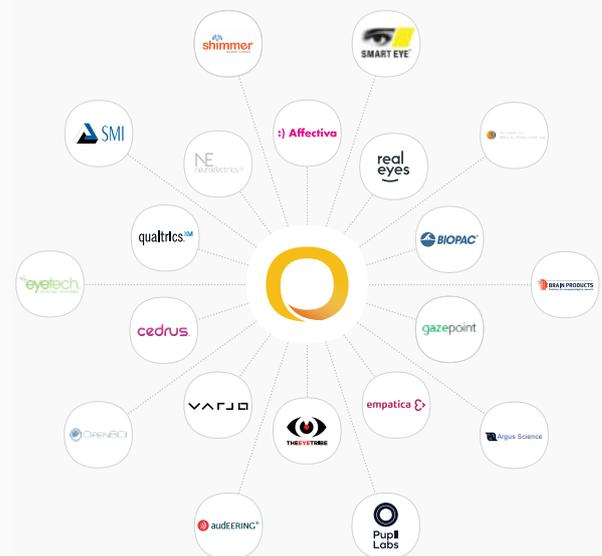


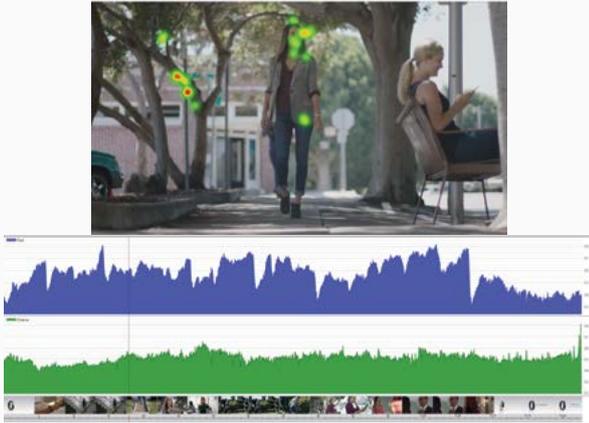
### Fully automatic gaze-mapping

Use the full capability of eye tracking glasses with gaze-mapping analysis. Understand how respondents view and interact in the real, dynamic world by analysing their data with gaze-mapping. Convert the spatially 3D responses to 2D replays and heatmaps that can be easily comprehended and quickly provide insights.

### Boundless integration possibilities

Integrate and synchronize 50+ different sensors from 20+ independent vendors, across 10+ modalities. Add even more sensors through the Lab Streaming Layer. Forward data in real time and import external sensor / software data and loop it back into the platform via the API.



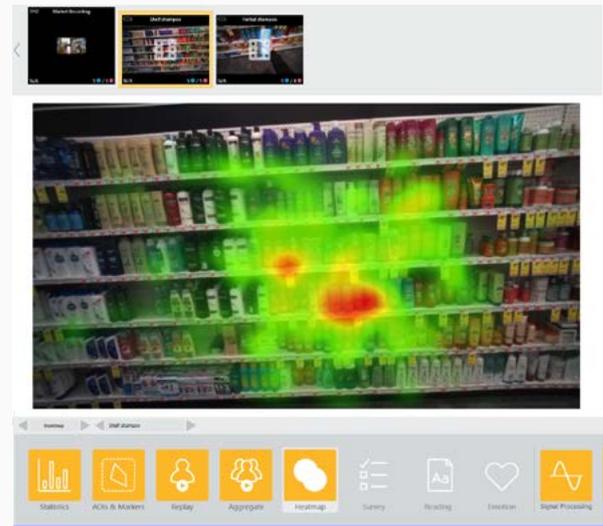


## Live data and a range of analysis tools

Live visualize all incoming data, from gazes in the real world, to pupillometry. Get instant results in the form of metrics - time to first fixation, heatmaps, time spent etc. Use areas of interest to dissect crucial parts of the scene. Export data in suitable formats for further analysis if needed.

## Full experimental suite for eye tracking glasses

iMotions provides all the tools needed for eye tracking research, from calibration and recording, to both quantitative and qualitative analytical tools. Get quick insights within an intuitive experiment environment.



## Make your research fully mobile

Connect a variety of other biosensors to understand human behavior in completely natural environments. The combination of eye tracking glasses with other sensors allows insights like never before.

# Eye Tracking Glasses Hardware Options

## Ideal equipment to meet your needs

iMotions seamlessly integrates a range of eye tracking devices, that cover various technical requirements and budget levels. All eye tracking equipment can be easily synchronized with other biosensors on a modular basis.



### Pupil Labs

Pupil Labs is a company that strives to provide accessible, open-source solutions for researchers using eye tracking glasses. The Pupil Headsets are designed to be lightweight, unobtrusive, and easy to use.

Several options for forward-facing respondent cameras are available, from a lightweight, high-speed camera, to full-HD recordings, to the RealSense camera from Intel, that provides depth information with the image.

The device is 200 Hz, ensuring that data collection is accurate, even in complex environments.

The accessible and versatile solution is ideal for researchers looking to start work with eye tracking glasses.



### Viewpointsystems

Viewpointsystem produces the VPS 19 glasses - a system built for industrial training and workplace testing, but capable in almost any environment.

The eye tracking glasses collect a video from the world camera as well as gaze data obtained from two eye cameras. They are operated through a mini computer called "Smart Unit".

The VPS 19 glasses are easily operated and weigh only 43 grams. They provide full functionality even in changing light conditions, and data that can be simply imported into iMotions.



### **Argus Science / ASL**

Argus Science provides the ETVision eye tracking glasses, a lightweight 180 Hz device. The company formerly known as Applied Science Laboratories (ASL) also produced the ETMobile, a lightweight, 30-60 Hz solution for capturing attention in natural environments. The data can be streamed in real-time through a WiFi connection, via a transmission unit that is worn during recording.



### **SMI**

Although no longer in production (after being acquired by Apple in 2017), SMI's eye tracking glasses remain widely used, and have been well-regarded within the academic world. iMotions offers support for all SMI eye tracking glasses, that cover a range of different capabilities. SMI glasses data can be imported after collection for analysis (including automated gaze-mapping).



# Eye Tracking Glasses Research Capabilities

## Different solutions for different needs

The capabilities of different eye tracking glasses can differ in iMotions. View the chart below to see which solution meets your needs the best.

Capabilities within iMotions	Pupil Labs Neon	Viewpointssystem	SMI Eye Tracking Glasses 2	ASL ETGlasses
Record data directly	Yes	No	No	Yes
Live synchronize with other sensors	Yes	No	No	Yes
View live datastream	Yes	No	No	Yes
Post-import	Yes	Yes	Yes	Yes
Analyze all data	Yes	Yes	Yes	Yes
Individual replay	Yes	Yes	Yes	Yes
Markers and scene creation	Yes	Yes	Yes	Yes
Automatic gaze-mapping	Yes	Yes	Yes	Yes
AOIs, heatmaps, metrics	Yes	Yes	Yes	Yes
Aggregation of all data	Yes	Yes	Yes	Yes

# Selected Publications

## Research made possible with eye tracking glasses

### **Maternal gaze to the infant face: Effects of infant age and facial configuration during mother-infant engagement in the first nine weeks.**

Authors: De Pascalis, L., Kkeli, N., Chakrabarti, B., Dalton, L., Vaillancourt, K., Rayson, H., Bicknell, S. et al.

Universities: University of Reading, University of Cyprus, King's College London, University of Cape Town

[View publication](#)

### **Unsold is unseen ... or is it? Examining the role of peripheral vision in the consumer choice process using eye-tracking methodology**

Authors: Wästlund, E., Shams, P., and Otterbring, T.

Universities: Karlstad University, Aarhus University

[View publication](#)

### **Wearable Gaze Trackers: Mapping Visual Attention in 3D**

Authors: Jensen, R. R., Stets, J. D., Suurmets, S., Clement, J., Aanæs, H.

Universities: Technical University of Denmark, Copenhagen Business School

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### **Looking at paintings in the Vincent Van Gogh Museum: Eye movement patterns of children and adults**

Authors: Walker, F., Bucker, B., Anderson, N. C., Schreij, D., Theeuwes, J.

University: Vrije Universiteit Amsterdam

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### **Positive Affect Is Associated With Reduced Fixation in a Realistic Medical Simulation**

Authors: Crane, M. F., Brouwers, S., Forrest, K., Tan, S., Loveday, T., Wiggins, M. W., Munday, C., and David, L.

Universities: Macquarie University, Nepean Hospital, Clinical Excellence Commission

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### **Does the presence of a mannequin head change shopping behavior?**

Authors: Lindström, A., Berg, H., Nordfält, J., Roggeveen, A. L., and Grewal, D.

Universities: Stockholm School of Economics, Stockholm University, Babson College

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### **Workflows and individual differences during visually guided routine tasks in a road traffic management control room**

Authors: Starke, S. D., Baber, C., Cooke, N. J., and Howes, A.

University: University of Birmingham

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### **Clinician's gaze behaviour in simulated paediatric emergencies**

Authors: McNaughten, B., Hart, C., Gallagher, S., Junk, C., Coulter, P., Thompson, A., and Bourke, T.

Universities: Royal Belfast Hospital for Sick Children, Ulster University, Queen's University Belfast

[View publication](#)

Jeanette Jakobsen, **Psychologist and Researcher** at **FORCE Technology**, describes her experience of using iMotions in her eye tracking glasses research in the video below:



Want to know more?

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