EyeTrek

Eye-tracking Tool for Fast Credibility Assessment and Concealed Information Detection

A science-backed solution for high-throughput non-intrusive security threat screening

April, 2026

About EyeTrek

EyeTrek is an eye-tracking security and investigations automatic screening platform designed to rapidly identify potential security threats by analyzing involuntary gaze behavior. By combining neuroscience, behavioral science, and AI-driven analytics, EyeTrek delivers science-based, non-intrusive, quick and scalable screening for concealed intent, deception, and malicious risk indicators.

Each EyeTrek session lasts 3-5 minutes and is designed to fit the client's needs. EyeTrek test administration doesn't require trained staff, making it easily applicable for border control, HR, investigations and assessments. EyeTrek is currently working with select design and distribution partners.

Security screening needs innovation

High throughput environments demand fast, scalable screening. Traditional methods remain slow, invasive, and dependent on subjective interpretation or highly trained personnel.

Interviews can be rehearsed. Physiological tests can be countered.

Organizations need to detect security threats quickly and reliably, without increasing friction, cost, or operational burden.

The EyeTrek Solution

EyeTrek is an eye-tracking screening platform designed to rapidly identify potential security threats by analyzing involuntary gaze behavior and pupil dilation.

By combining neuroscience, behavioral science, and advanced analytics, EyeTrek delivers:

- Rapid (3–5 minute) screening sessions
- Non-intrusive testing
- Automated administration without trained operators and with standardized results
- Low false detection rates, configurable by the client
- Scalable deployment for high-throughput environments

Each protocol is customized to the client's operational needs, making EyeTrek suitable for border control, HR screening, investigations, insider threats, sensitive facility access and more.

Concealed information can be anything from stolen or smuggled goods, through information security leaks or prior acquaintance with investigation subjects, criminal or hidden knowledge and more.

The Science Behind EyeTrek

Human vision operates through rapid eye movements, pupil dilation, and blink patterns, all of which are influenced by cognitive and emotional states. Eye responses are strongly associated with:

- Recognition and concealed knowledge
- Cognitive load
- Emotional arousal
- Stress responses

Modern video-based eye tracking (oculometry) allows precise measurement of:

- Gaze patterns and fixation behavior
- Pupil dilation linked to autonomic arousal
- Blink frequency associated with cognitive processing

Decades of peer-reviewed research demonstrate that these responses are largely involuntary and difficult to consciously control. Research in concealed information detection and gaze-based cognitive analysis forms the scientific foundation of EyeTrek's protocols.

Professor Yoni Pertzov, Head of the Visual Cognition Lab at the Hebrew University of Jerusalem and a leading researcher in the field, is a co-founder of EyeTrek.

Why EyeTrek

EyeTrek provides a modern alternative or complement to traditional screening methods.

- **Involuntary signals:** Eye responses are difficult to manipulate
- **Countermeasure awareness:** Attempts to control gaze behavior can be detected
- **Non-intrusive:** Does not requires wires, or physical contact
- **Fast and standardized:** 3–5 minute automated sessions
- **Scalable:** Suitable for high-volume screening environments
- **Accessible:** Minimal reliance on language or literacy

Administration requires only a standard computer and a commercially available eye-tracking camera (That could be provided by EyeTrek).

Compared to other technologies, EyeTrek tests take the shortest amount of time, are scientifically validated, reliable and not dependent on operator training or subjectivity.

Method	Accuracy	Tester Dependent?	Speed	Automation	Scientific Validation
EyeTrek	Very High	No	Fast	Full	Fully validated for CIT
Polygraph	High	Yes	Slow	Partial	Partial validation, controversial
Micro expressions	Moderate	Depends	Fast	Possible	Limited scientific and field validation
Voice stress	Low to None	No	Fast	Full	No validation
Body language	Low to None	Yes	Fast	No	No validation

How EyeTrek Works

01

The subject sits or stands in front of a display equipped with a video-based eye tracker

02

A brief protocol presents structured text and/or image-based prompts

03

Eye movements, pupil size, and blink rate are continuously recorded

04

Proprietary AI analytics evaluate cognitive and arousal patterns

05

A structured report is generated within minutes

Use Cases

EyeTrek can be used by both governments and corporations, for traditional investigations and novel screening applications that are now possible due to the speed and power of EyeTrek testing.

- Security screening and vetting
- Fraud and insider threat prevention
- Border control
- Critical infrastructure protection
- Investigations
- Compliance assessments

About EyeTrek

EyeTrek is built on patented technology and backed by scientific evidence. The platform is currently working with select design partners and distribution partners.

About the founders:

Mr. Eyal Peled

CO-FOUNDER & CEO

Senior Israeli Homeland Security official with extensive experience in behavioral research and field-proven security methodologies. Former Head of the Israeli Government Polygraph Unit and Security Vetting Investigation Unit. Head of Israel's aviation security in the UK and Ireland.

Prof. Yoni Pertzov

CO-FOUNDER & CHIEF SCIENCE OFFICER

Full Professor, Hebrew University of Jerusalem. 25+ years of eye-tracking research focused on concealed information detection and cognitive processing.