

AUTOBRAINS

Rethinking AI for a Safe  
Transition from ADAS to AD

# We reverse-engineer the human perception for scalable ADAS and autonomous driving solutions

Revolutionizing how deep learning is applied with a new approach that is closer to the human driving perception, Autobrains offers solutions for the next generation of vehicles and mobility – providing safer solutions, with superior performance at lower energy consumption and cost.



Our technology enables cars to learn, collaborate and interact with the world like humans, without human supervision.



A more efficient platform that carries out complex AI tasks by using inexpensive sensors while requiring low power compute

## A Breakthrough in Autonomous Driving

Autobrains' patented signature-based, self-learning AI doesn't need to teach the system about driving through labels and language. Rather, our approach is like a newborn learning about the world. The system learns without guidance, the environment is explored without language.

## Shortcomings in current AI development approaches to autonomous driving

### Today's Approach: Traditional deep learning capabilities

Manual labelling - subject to higher costs, bias and errors

Growing compute and power requirements

Weak accuracy in edge cases

Gap between perception and decision

Black box – non-explainable solution, without visibility and separability capabilities

### Autobrains' Approach: Safe and scalable autonomous driving technology

Adaptive self-learning in dynamic environments

Low compute requirements – affordable to every driver

Superior accuracy in edge cases

Bridging the perception to decision gap

Open AI platform – the signatures provide an explainable AI, inquiring the self-learning process

**Our vision is to rethink AI for a safe transition from ADAS to autonomous driving.**

# Using a signature-based approach, Autobrains brings competitive ADAS closer



## Signatures

Simulate how the human brain functions – shifting from labels to generic representations. Sensory information is indexed by compressed, generic neural responses and later used for various semantic tasks.

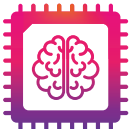
The use of signatures translates into compressed representation, low compute and more granular representation for edge cases.



## Self-learning

Bottom-up clustering into concepts.

- Independent learning, insensitive to manually labelled data
- Comprehensive representation of long tail edge cases
- Ability to learn in real time, and update developers' databases



## Adaptive Architecture

Our architecture is not hand crafted, but rather self-learned and driven by data.

Different, small fractions of resources in the network are applied or routed during processing.

The use of our adaptive architecture translates into superior performance in edge cases, higher efficiency and low compute requirements.



## Perception Fields

Extending perception to forces, not just objects, capturing interactions and dynamics



## EON AI - Ensemble of Narrow AI Agents

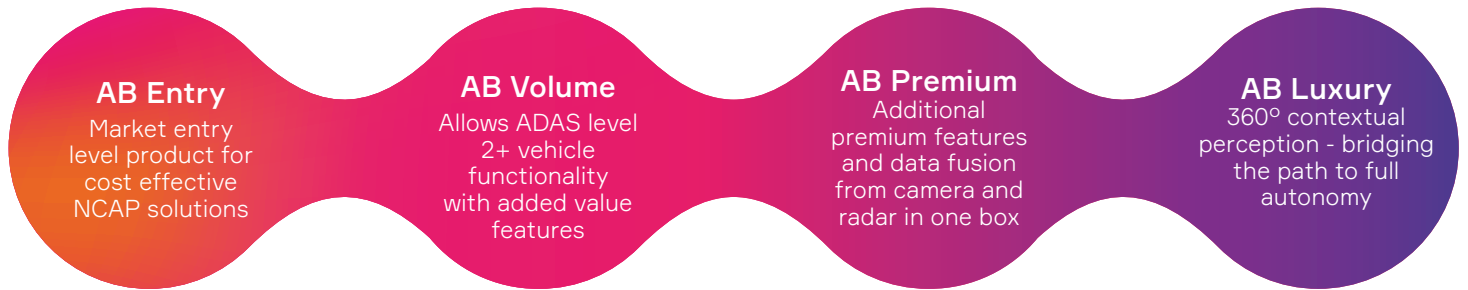
The perception module routes the sensor input to a small number of narrow AI agents that are specialized on specific scenarios performing end-to-end tasks.





# Autobrains offers the full spectrum functionality – from level 1 to level 4

Our modular and scalable AB Perception solutions meet global regulations and requirements, from entry-level C-NCAP and the GSR to offerings with greater functionality and processing power supporting the fusion with additional sensors and enabling 5-star NCAP ratings.



## Autobrains' main technological advantages

Autobrains' software (SW) stack is fully agnostic to hardware (HW) and sensors, enabling faster and more efficient porting to new System on a chip (SoC) platforms, adaptation to different optical paths and an early development regardless of whether the hardware has been predefined.

 <p><b>Safer</b></p> <p>Our ADAS solutions score 5 stars on safety regulation tests with superior performance in edge cases</p>	 <p><b>Adaptivity</b></p> <p>Understands the surrounding environment and is adaptive to contextual and environmental changes in real time</p>
 <p><b>Hardware Agnostic &amp; Modular Software Features</b></p> <p>Integrable in given HW and SW environments</p>	 <p><b>Higher Efficiency &amp; Lower Energy Consumption</b></p> <p>Better performance at up to 40% less cost &amp; 10x less energy consumption</p>

## Autobrains is enabling affordable ADAS through self-learning AI for a safe and scalable transition to autonomous driving

### Technology

- Neuro-inspired signature-based AI
- Represents a paradigm shift towards self-learning
- Developed for autonomy for 10+ years
- Protected by over 250 patents

### Maturity

- Tested and vetted by industry leaders
- Proven on millions of miles

### Leadership Team



**Igal Raichelgauz**  
Founder & CEO



**Hilla Tavor**  
CBO



**Karl-Thomas Neumann**  
Chairman

### Partners & Investors



Downloadable version

Get in touch: [info@autobrains.ai](mailto:info@autobrains.ai) | [www.autobrains.ai](http://www.autobrains.ai)