aiMotive™

From data generation to autonomous driving

aiMotive has **the single open autonomous driving stack** in the world

aimotive.com

aiDrive™

aiMotive components in production

PRODUCTION

EMBEDDED SOLUTIONS

aiDrive for level agnostic self-driving

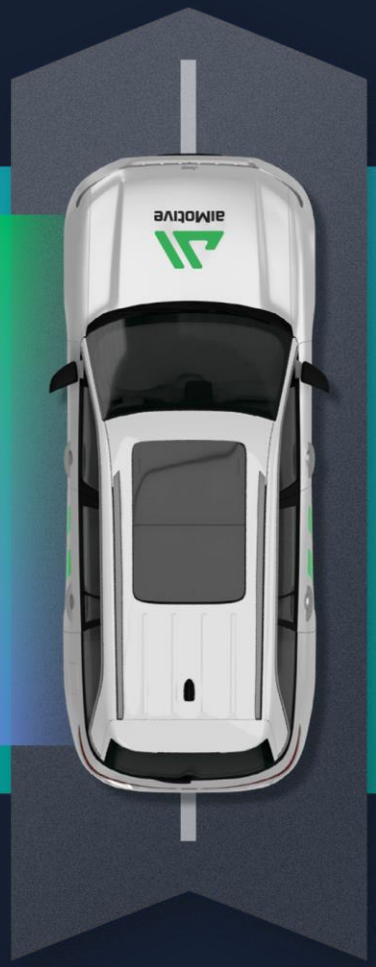
- L2+ Highway NOA
- L2 Address-to-Address Urban NOA
- Automated parking
- L3 Highway Pilot

aiWare for efficient AI processing

- NPU Hardware IP
- aiWare Studio
- Bit-accurate & fast emulator for SIL

aiDrive™
Full-stack software

aiWare™
Hardware IP for NN acceleration



aiSim™
End-to-end simulation platform

aiData™
Data pipeline for automated driving

TOOLING

aiSim for virtual validation

- Neural Rendering
- Real-time Sensor Engine
- Scenario & 3D World Editor
- Synthetic Data Generation
- Adaptive Iteration
- 5000+ Virtual Assets

aiData for automated data management

- Automated Data Collection
- Automated Annotation
- Data Analysis & Metrics
- Data Curation & Versioning
- Automated HD Map Generation
- Neural Reconstruction

CONCEPT

aiDrive™

aiDrive: aiMotive's Hybrid Approach for ADAS & AD – Making End-to-End AI mainstream

aiDrive sample sensor architecture for autonomous driving, featuring cameras, and radars.

aiDrive visualization on the vehicle's head-unit, displaying color-coded traffic flow.

aiDrive is a modular, hardware-agnostic software stack for SAE L2-L4 autonomy, delivering scalable, cost-efficient, and safety-validated performance across diverse platforms – powered by embedded AI and tested globally against industry benchmarks.

INDUSTRY CHALLENGE: Developing safe, scalable, and cost-efficient automated driving systems is limited by hardware dependency, and the complexity of adapting to diverse vehicle platforms & driving environments.

OUR SOLUTION: aiDrive is a modular, hardware-neutral software stack for SAE Level 2-4 ADAS & AD.

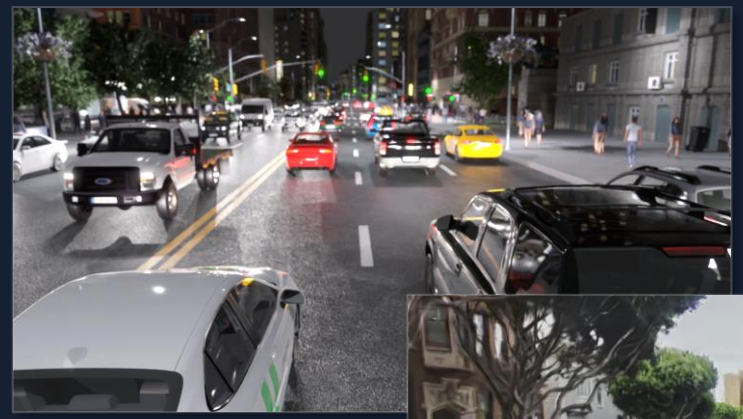
USP: aiDrive offers market-leading cost efficiency on centralized architectures. Validated across continents (Europe, America) with 1,000s of real-world driving hours. Matches or outperforms industry benchmarks.

KEY FEATURES:

- **Scalable NN architecture:** Supporting L1-L4 applications, including L2+ Highway NOA, Urban NOA, L3 Highway Pilot, and Automated Parking
- **Hardware-agnostic:** Runs on commercial SoCs (Qualcomm, Nvidia, aiWare); supporting 1-5-6-11 camera setups.
- **360° BEV Fusion AI:** Core of semantic world model; integrates low-level radar for ADAS features (PACC, LCC, AEB, etc.)
- **End-to-End Trajectory Learning:** Handles complex scenarios (e.g., roundabouts, unmarked roads) with semantic cross-checking.
- **Efficient on small chips:** Enables entry-level ADAS with early fusion & E2E components.
- **Specialized AI:** Image-space AI for semantic understanding of special cases, including traffic signs, lights, exo-vehicle headlights; support for ISA, TLR, etc.
- **Compliant** with GSR, Euro NCAP 2026, FMVSS 127

TRACTION: **aiDrive stack developed for Stellantis production programs.**

aiSim: Accelerating AD Development with Leading Perception Simulation



aiSim's ultra high-fidelity ray-traced rendering in a US urban environment

World's first hybrid neural rendering, combining aiData World Extractor's environment with aiSim's high-fidelity assets to enable controlled randomization of edge-case scenarios

aiSim empowers safe & scalable development of autonomous systems through high-fidelity, deterministic simulation – trusted by industry leaders to accelerate innovation and reduce real-world testing costs.

INDUSTRY CHALLENGE: Developing and validating autonomous systems in the real world is **costly, slow, and risky.**

OUR SOLUTION: aiSim is a high-fidelity, deterministic simulator designed to accelerate the development and validation of autonomous systems in a virtual environment.

USP: **Purpose-built** for automotive-grade **determinism** and sensor realism utilizing aiSim **AIR rendering engine**; ensuring seamless integration with perception, planning, and validation pipelines.

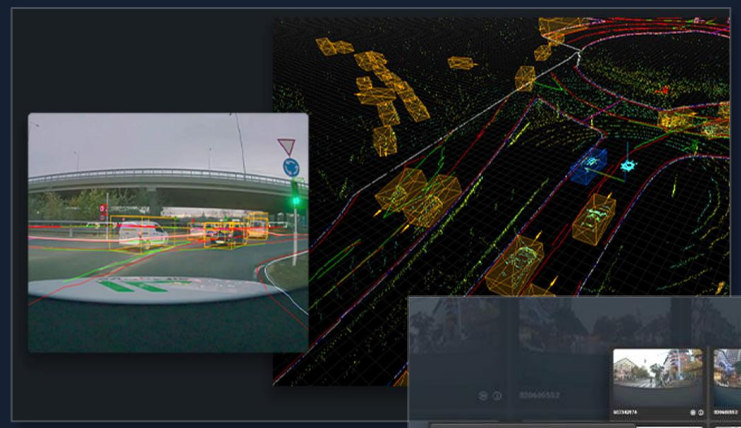
KEY FEATURES:

- **Photorealistic rendering** with real-time performance in SiL & HiL setups including complex sensor setups, e.g., 10+ cams, 5+ radars, 5+ LiDARs
- **Covering all ODDs** from L2 to L4 including Highway, Parking & Urban scenarios
- **Statistical scenario randomization** for edge-case testing at scale
- **Scalable architecture** to support millions of test runs in parallel
- **Wide range of assets** for easy kick-start including 5,000+ 3D assets, 100+ vehicle models, 1,000+ sample scenarios, 20+ physics-based sensor models; Web-based UI for sensor, environment and scenario editing
- **Extensive open standard support,** including OpenSCENARIO, OSI, OpenDRIVE, OpenCRG and OpenMATERIAL to ensure interoperability across the industry

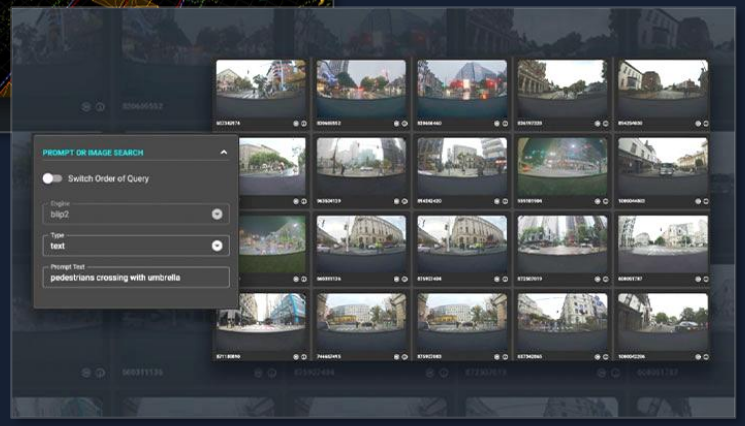
TRACTION: **Used by 10+ leading OEMs, Tier1s and sensor companies from all around the world, including US, Europe and Asia**


aiSim 5
aiMotive introduces aiSim 5

aiData: Automating Data Processing for Automotive Software Development



3D LiDAR & Camera sensor output of aiData auto-annotation pipeline – Urban Roundabout Use Case



Web UI of aiData to curate diverse datasets leveraging text-, image, and scenario-based searchability

aiData's proprietary pipeline & tools reduce the complexity of processing data with high level of automation while ensuring traceability required for automotive software development

INDUSTRY CHALLENGE: Ensuring valid data collection, minimizing low-value and manual labeling, scaling training across diverse ODDs, and maintaining efficient, traceable data management for safe software development.

OUR SOLUTION: Integrated, cost-efficient, data-driven pipeline ensuring efficient collection, processing and querying of multi-sensor data for automated driving.

USP: aiData 3D auto-annotation pipeline provides superhuman precision over manual annotation at the fraction of its cost and at a daily performance of 135,000 frames (2.5 hours) per a single server instance.

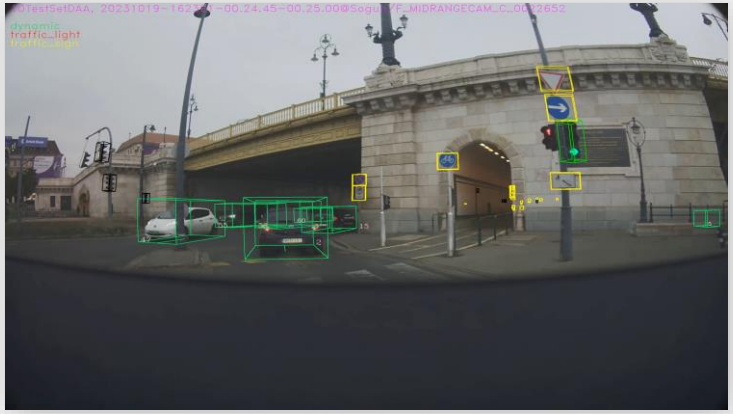
KEY FEATURES:

- **Recorder:** Our automated data collection is focusing on gaps and edge cases: reference sensor design, calibration toolkit and data ingestion software solution
- **Auto Annotator:** Multi-sensor AI-based automatic annotation for dynamic objects, traffic signs and lights, roads and lanes with industry-leading precision
- **World Extractor:** Automatically create simulation-ready 3D environments from raw recordings using neural reconstruction within a day
- **Metrics:** Track development progress against requirements and provide real-time insights against NCAP, GSR, FMVSS or other requirements
- **Versioning System:** Our Data Versioning System enables finding the relevant data from the pool of enriched recorded sensor data and tracks the life of data from recording all the way to neural network training

TRACTION: **aiData pipeline deployed at 3+ leading passenger & commercial vehicle OEMs in commercial programs in EU, US and Asia**

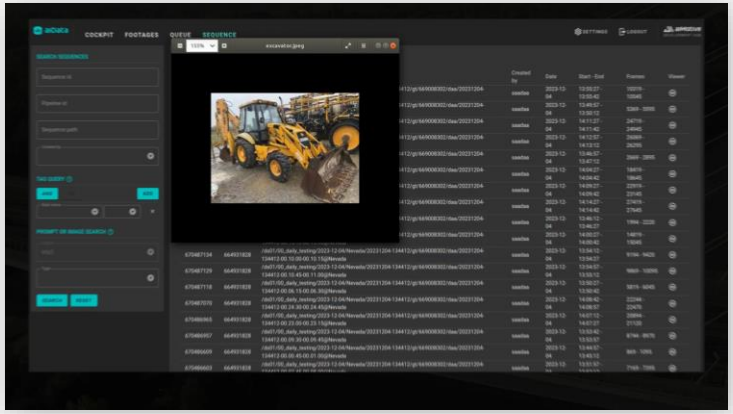
Industry leading auto annotation, data curation and neural reconstruction to support high-quality training data and simulation

Auto annotation



LINK to video

Image- and text-based search



LINK to video

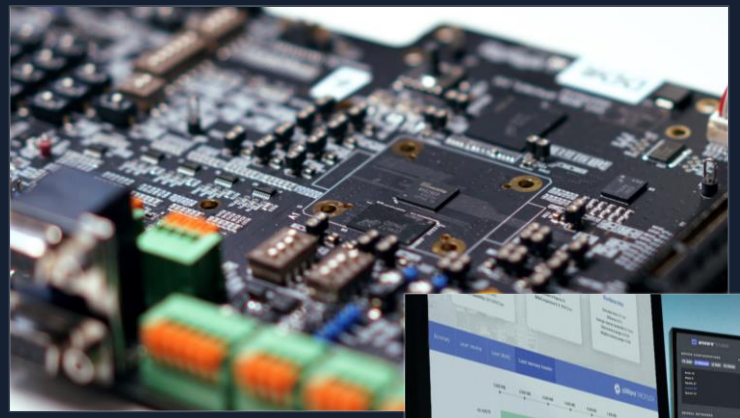
Neural reconstruction

LINK to video

One-stop-shop for AI-based automotive development, taking care of all steps of the data cycle

aiWare™

aiWare: The only licensable NPU IP born from autonomous driving



Nextchip Apache5 IEP SoC Imaging Edge Processor utilizing aiWare IP

aiWare Studio enabling interactive workload analysis in a minute; performance accuracy within 5% of a real chip

aiWare IP Core combines high performance with low power consumption through a highly efficient architecture. Scalable from 1-1024 TOPS, it supports a wide range of automotive applications using up to 256 effective TOPS per core.

INDUSTRY CHALLENGE: Automotive AI processing faces growing complexity: ensuring functional safety, achieving efficiency and flexibility across diverse AD levels, and above all, enabling scalable validation.

OUR SOLUTION: aiWare is a purpose-built neural network accelerator IP for efficient, scalable, and automotive-grade AI inference in AD/ADAS; uniquely designed to enable rapid, iterative validation across the product lifecycle.

USP: Production-proven IP, up to 1024 TOPS per chip, ASIL-B safety compliance, providing unique tools for AI engineers and system validation.

KEY FEATURES:

- **Low power:** Optimum on-chip SRAM means large NN workloads are processed efficiently with minimum off-chip traffic. Low external DRAM bandwidth means lower system power.
- **Functional safety:** Designed ground-up for ASIL-B compliance as a SEooC, complemented by comprehensive safety documentation. aiWare4 NPU has achieved ISO 26262 ASIL B certification – making it the world's first ASIL B certified NPU hardware IP in the industry.
- **Easy integration:** Designed for ease of layout, simple software interfacing, and advanced tools for system integration and validation
- **Unique tooling:** The industry's first faster-than-real-time, GPU-accelerated, bit-accurate NPU emulator — enabling massive SIL testing of full ADAS stacks in scalable server or cloud environments.

TRACTION: **Licensed by 2 key semiconductor companies from Japan and South Korea.**

aiMotive Professional Services for maximizing customer satisfaction and project value

Leverage aiMotive's unique offerings through tailored services.

Road-ready automotive AI starts with high-precision data.

aiMotive customers can leverage our past experiences with all aspects of ADAS/AD development and have the necessary setup and support to use our products and services to maximize the benefits for their project.

INDUSTRY CHALLENGE: There is lot of noise on the market, and many companies conduct projects built on trials and errors. Customers are inexperienced with the state-of-the-art.

OUR SOLUTION: Efficient cooperation between highly skilled teams from AI researchers, data scientists, to vehicle integration and simulation teams, ensuring that we can solve any AD/ADAS-related issue clients may face

KEY OFFERINGS BUILT-ON AIMOTIVE PRODUCTS:

- Auto-annotation as a service
- Mapping, data collection as a service
- Neural reconstruction as a Service
- Sensor setup design (Ground-truth, production)
- Sensor calibration as a service
- On-prem and cloud deployment
- Synthetic data and scenario generation as a service
- Digital twin creation for simulation (maps, 3D assets)
- Simulation framework integration
- Custom Hardware design for HIL simulation
- Neural Network optimization for the target platform
- AD/ADAS feature calibration
- Regulatory testing and evaluation

TRACTION: **Every existing project includes services and custom developments**

The character and organization of aiMotive

aiMotive successfully recruits the best automotive professionals

220 engineers of 320+ total headcount (out of which 40 trainees)

60 artificial intelligence, research, data engineers

22 employees with PhD

35 average age of employee base

95+ % retention rate

Rich in automotive talent & active throughout the value chain

World-class team

Young, dynamic, technically competent and dedicated people identifying with the mission and vision of the company.

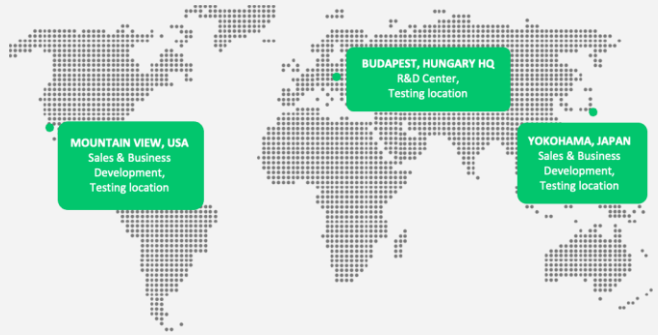
Healthy business

Customer revenue from day one with flat company hierarchies to avoid administrative waste.

Founded in 2015, aiMotive has developed a global footprint

Founded in 2015
by CEO Laszlo Kishonti.
Incorporated in Germany, headquartered in Budapest.
Acquired by Stellantis in 2022

Global footprint



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