TATA ELXSI

AUTONOMOUS DRIVING MIDDLEWARE

Quick | Flexible | Reliable

Market Opportunities

The concept of self-driving car technology has always been perceived as futuristic. Ride-sharing economy will soon migrate to demand for driverless vehicles.

Technological breakthroughs in user experience, maturing AI and safety-centered technologies are bringing vehicles one step closer to full autonomy.

Machine learning algorithms can be applied to:

- Mapping and to localize the vehicle in space
- Sensor fusion and scene understanding
- Navigation and movement planning
- Evaluation of the driver's state and behavior pattern recognition
- Collision avoidance

Services for AD

Autonomous middleware stack

- Available as full stack or modular components/ solutions like sensor fusion, localization, motion & path planner, etc. depending on customers needs
- Sophisticated algorithms - AD features (lane keep, stop & go, lane change) and V2X features (GLOSA, LAM) already tested on field trials in Germany. Trials on urban roads is in progress.
- CNN based traffic sign detection has 99.59% accuracy for German traffic sign data

Early Go to Market for OEM

- Faster realization of Level 3+ autonomous driving
- PC or hardware based, saves time-to-market with little customization effort
- Easily deployable in test vehicles

Easy Integration

- Easy porting, optimization, integration and testing of customer systems, sub-systems & algorithms
- Professional services team for services like testing, validation, hardware porting optimization, FuSa

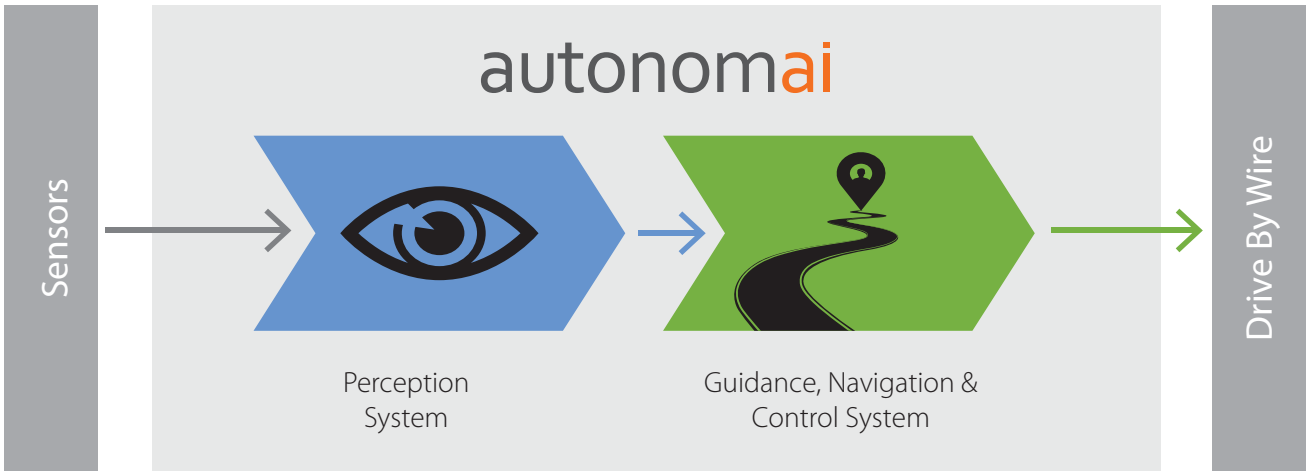
Partner for Your Roadmap

- Build prototypes
- Create test beds
- Develop simulators

autonomai

AUTONOMOUS DRIVING MIDDLEWARE

Product Description



Key Features

Modular architecture

Full middleware/ systems/ sub-systems/ specific advanced ADAS applications

Plug and play architecture

Easy porting, optimization, integration & testing of customer systems, sub-systems, and algorithms

Supports combination of multiple sensors to suit customer requirements

LiDAR, RADAR, ultrasonic sensors, cameras

Enables rapid region specific adaptation

Through pre-integrated validation datasets, AI & deep learning capabilities

Tata Elxsi's Convolutional Neural Network based Traffic Sign Classifier achieved best-in-class with **99.59%** accuracy on **German Traffic Sign Recognition Benchmark** dataset, surpassing the best human performance of **98.84%**

Deep Learning & Artificial Intelligence

Case

- Autonomai stack licensed to one of top 5 OEMs
- Tested successfully with sensors including **SRR, LRR, LiDAR, CAM, IMU, GPS**
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