



Fast lane to autonomous driving

Full Product Lifecycle Autonomous Simulation



Cognata was founded by ADAS industry veterans, with broad expertise in computer vision and Deep Neural Networks.

Cognata enables Autonomous Vehicles makers to rapidly develop, test, validate and safely deploy driverless cars.

Cognata provides an End-to-End solution supporting all stages of Autonomous Vehicle simulation.

Technology

The Cognata platform delivers the necessary components for autonomous vehicle simulation in **four layers** of technology:

Automated Digital Modeling of the World

Training autonomous vehicles in virtual worlds requires an environment of extreme detail and highly-accurate data, from a variety of sources. The Cognata static layer automates the build process to quickly deliver 3D environments of roads, buildings, and infrastructure that are accurate down to the last lane marking, surface material, and traffic light.

Intelligent Virtual Populations

An autonomous vehicle may have learned to behave well, but the same isn't always true of others on the road. In the dynamic layer, Cognata populates the virtual world with drivers, pedestrians, and cyclists that replicate behavior customary to the specific region being simulated. With Cognata, autonomous vehicles can safely learn to share the road with locals before setting a tire on the pavement.

Models of Today's Advanced Sensors

The variety of camera, RADAR, and LidAR sensors used in today's vehicles creates a challenge of depth and breadth for developers. Using Deep Neural Networks, Cognata accurately models the exact behaviours of various sensors; Cognata's sensing layer includes accurate models of many popular sensors and a toolchain for quickly onboarding new sensors.

Cost-effective Scale in the Cloud

Measuring safety improvement of each new algorithm or software release requires test coverage across thousands of scenarios, in complicated combinations of road types, lighting, weather, and traffic conditions. Cognata enables test teams to keep pace with rapid development in a cost-effective way. The cloud layer offers infinite scale of simulation in a secure environment.

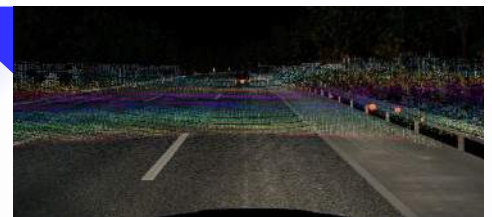
Static



Dynamic

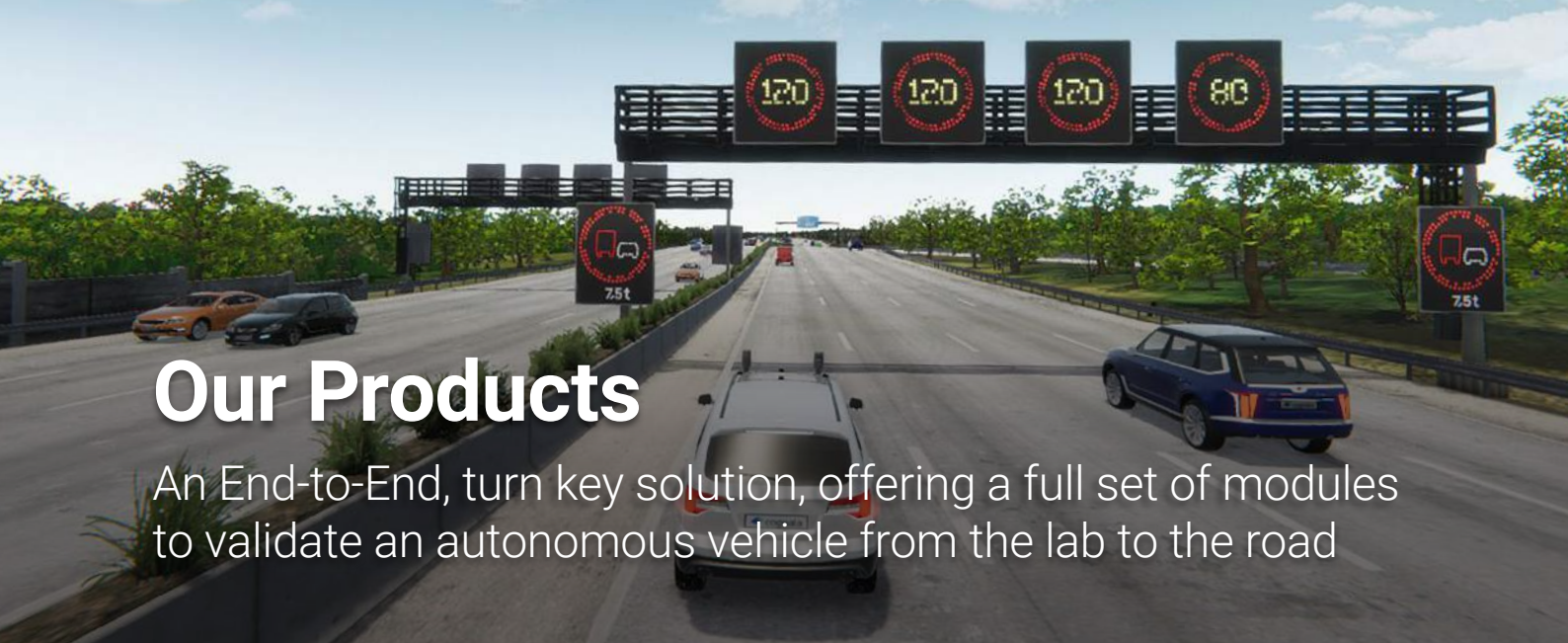


Sensing



Cloud



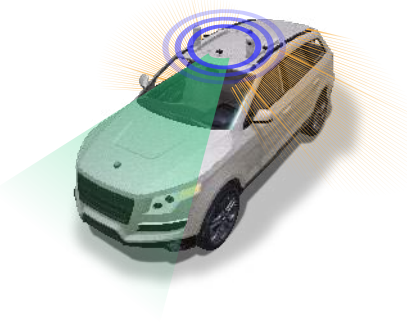


Our Products

An End-to-End, turn key solution, offering a full set of modules to validate an autonomous vehicle from the lab to the road

Procedural Building of Life-Like Scenes and Traffic Models

Rapidly built reality-grade 3D simulations of cities meshed with highways, roads, textures, pavements and street signs. All modeled to scale with HD maps accuracy. Populate this virtual world with desired AI-powered traffic models.



Sensors Configuration and Emulation

DNN modeled, full set of AV sensors array - Cameras, Lidar, Radar, GPS, Ultrasonic - fully configurable and integrated with the AV physical attributes to generate real-world simulation.

Studio

Select and deploy from an extensive range of scenarios that can be tested, validated and repeated. Manually control each scenario or fully automate the scenario building. Train the AV AI with different use cases and rapidly achieve valuable edge cases under any time of the day, weather conditions and geographic locations.



Cloud, Station and Bench

An advanced cloud-based simulation engine including a local station solution (SIL) and bench solution (HIL), creating simulation scenarios on an unlimited scale and variety. The result: lower costs and shortest safe time to market; all simulation outputs can include complete segmentation of each frame (semantic segmentation) and synthetic datasets with the highest quality and variety to be easily integrated into a tool chain.