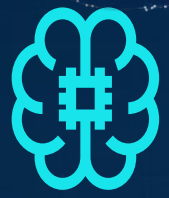
Commercializing Mass-Produced Autonomous Driving Solution

Maxwell Zhou

CEO at DeepRoute.ai

DeepRoute.ai

20 years
Robotics



10 years
AI

1 mission
Create AGI in Robots.
Do Cool Things.

Evolution of DeepRoute.ai Robotics System

Rule-based

More engineering

Less data

Detection | Object tracking | Late fusion | Prediction

Decision | Planning | Control | Mapping | Localization

2017

Early fusion network | Prediction | Mapping | Localization

Decision | Planning | Control

2022

General perception net | Prediction planning net | Control

Learning-based

Less engineering

More data

August 2023

Initial road test of end-to-end system

A New Era:

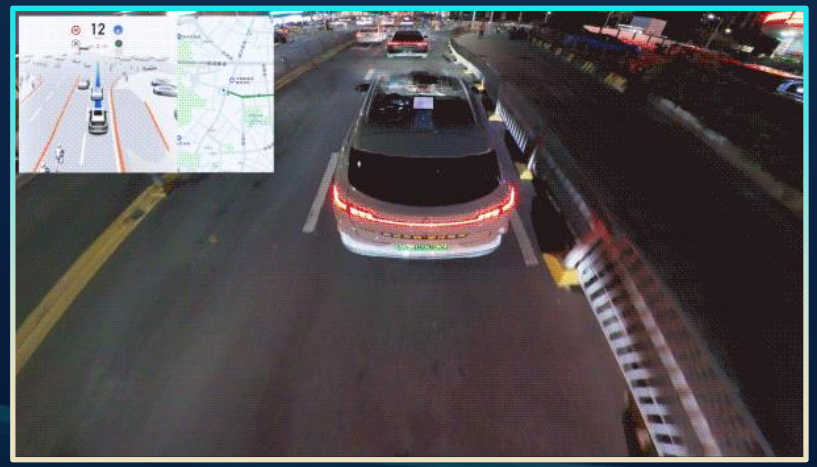
End-to-end is the beginning of Autonomous Driving 2.0

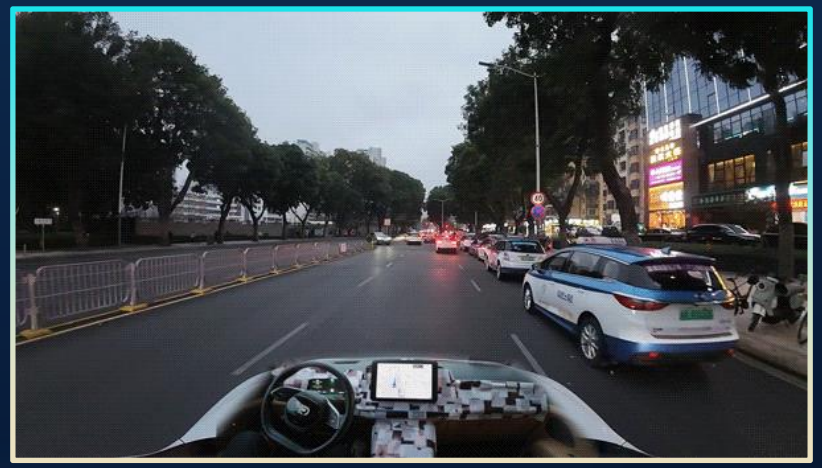
DeepRoute.ai is committed to E2E architecture and
find the Scaling Law in Robots, scale up model, scale more data.

DEEPROUTE.Ai

Polite, human-like

Smooth





Release to market this year

DEEPROUTE.Ai

Benefits of End-to-End Autonomous Driving

No information loss

- Raw vector data exchange between modules, i.e. perception and planning modules
- Avoid information loss caused by human-engineered rules
- Increased capability in recognizing, reasoning and handling complex scenarios

Unlimited, more diverse scenarios

- Learn through millions video clips
- Understand polite & efficient, more than just safety & comfort
- Increased efficiency to handle complex and unstructured environments

Consistent, human-like driving behaviors

- In complex scenarios, E2E architecture has more program space.
- More human-like, better experience and efficiency

DEEPROUTE.Ai

AGI in Robot - Key Elements & Limitations

Data Infra

- Data from physical world is messy
- Critical state data: balanced scenarios
- Able to handle >million cars, EB level data

Multi-modality Model

- BEV has its limitation for robots
- Understand physics in real world
- Understand interaction in real world

World Simulation

- Simulate steady state data
- Augment more critical state data

DEEPROUTE.Ai

Commercializing Mass-Produced Autonomous Driving Solution


努力创建
全国文明城市
圆通速递
7
35
40
421

DEEPROUTE.Ai

AD 2.0 Smart Driving Solution

Anytime. Anywhere

Affordable

Scalable

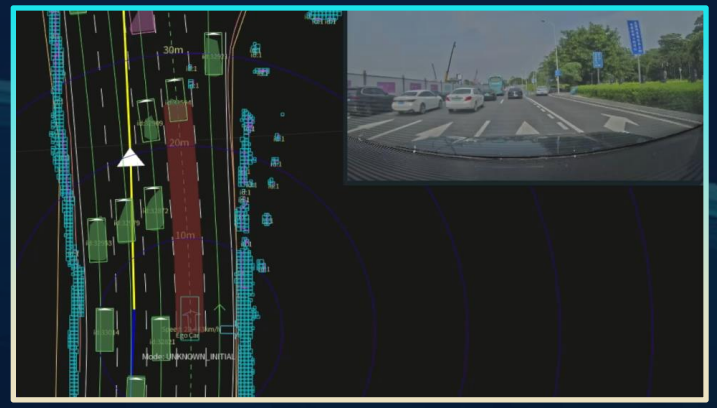
Automotive Grade

Diverse dataset

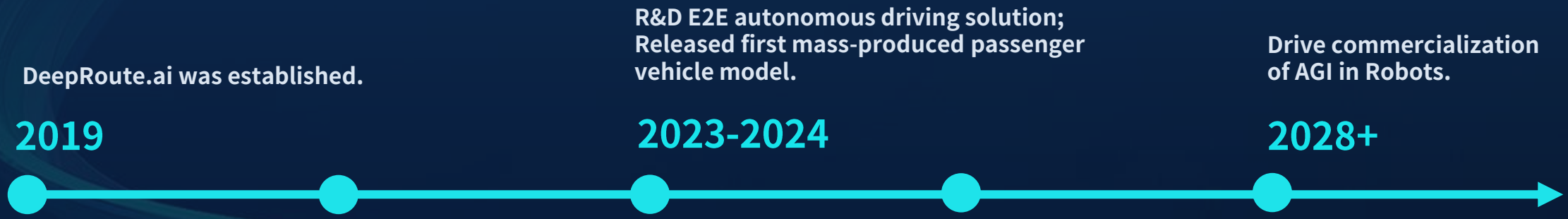
DEEPROUTE.Ai

Standard map prior for lane perception

- Perception net output SD localization and lane-SD binding
- Robust against SD error
- Super-human level navigation matching accuracy in the city



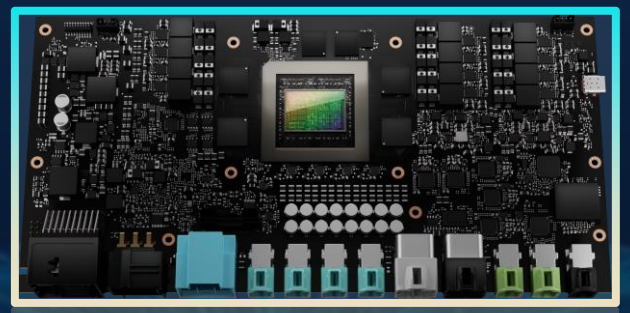
Commercialization Roadmap



NVIDIA DRIVE Thor is Essential for End-to-End Autonomous Driving

End-to-end architecture will follow Scaling Law.

Large models and more data are better.



In AI industry, DeepRoute.ai is one of the first to use DRIVE Thor for end-to-end autonomous driving.

DeepRoute NexGen Product Mapping

Automated driving system product

Present | **Late 2024 & 2025**

DRIVE Orin ***D-Pro***

General perception net and prediction planning net to enable Mapfree automated driving (address-to-address)

- BEV, Transformer enabled perception & reasoning capabilities
- Compatible with SD navigation map

Dual DRIVE Thor — Dual redundant AI systems to achieve L3+

DRIVE Thor — Driven by **E2E Architecture**, highly optimized network for the highest driving performance

- More human-like driving behavior for better experience and predictability
- Better semantic understanding and reasoning for enhanced safety

DRIVE Orin — - OTA possibility to adopt E2E system, with reduced feature for higher cost-performance option, vision-only solution.

General perception net
General decision net

Foundational technology enabler

End-to-end net

Let's Connect!

DEEPROUTE.Ai

Maxwell Zhou