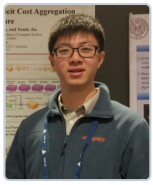
Lidong Yu

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EDUCATION

Beijing Institute of Technology (985) Aug 2016 – Jun 2019
M.S. in Computer Science & Technology, School of Computer Science Beijing

Ocean University of China (985) Aug 2012 – Jun 2016
B.S. in Computer Science & Technology, School of Computer Science Qingdao

WORK EXPERIENCE

Neolix Technology (Beijing) Co., Ltd. Aug 2025 – Present
Head of AD Algorithms, AD Division II Beijing
Algorithm org of 38 people, ~8,700 GPUs

- **Perception**
  - Group query-based multi-task model for object detection, lane detection, and occupancy network
  - E2E-based traffic light detection and navigation model
- **PNC & Two-stage Planner**
  - Static trajectory prediction + downstream dynamic trajectory optimization
- **E2E & World Model**
  - Two-stage pretrain with LLM distillation and perception model inception
  - Auto-regression-based trajectory prediction with multi-task fine-tuning and CoT debugger
  - Post-training with RL
- **Infra**
  - Data closed loop; offline large model for auto-labeling
  - Auto-balancing for multi-task training; multi-platform storage and training
  - Closed-loop evaluation and simulator

NVIDIA Jul 2024 – Aug 2025
Principal Engineer, Free IC of the Autonomous Vehicle Department Beijing

- **Modeling**
  - Roadnet (team of 16, ~1,200 GPUs), 3 months — upgraded static-perception HD maps to a Mapless solution: segment-based → query-based → token-based
  - Planner (team of 13, ~1,500 GPUs), 3 months — moved from classical PNC to a model-based planner: two-stage E2E with AR formulation
  - E2E (team of 13, ~3,500 GPUs), 6 months — Alpamayo mass-production ORIN delivery for the Mercedes-Benz SOP: one-stage E2E with Cosmos CoT and Alpamayo WM-RL
- **Infra**
  - Perception: continuous training with a data auto-balance and data-mining framework; multi-task training optimization with distillation
  - E2E-Alpamayo: backbone pretrain, fine-tuning, and post-training framework

Horizon Robotics Jun 2023 – Jul 2024
Head of Static Perception Algorithms, "Saturn V" Project Beijing
Led a 15-person modeling + 5-person post-processing team, ~1,200 GPUs

- Owned static-perception model + post-processing + data infra
- Upgraded segment-based lane detection to query-based, then to group-wise multi-task; static E2E + navigation model
- **Infra** (7 in-house devs + 5 contractors + 20 downstream auto-labeling / mapping / simulation)
  - Built a data closed-loop system from 0 to 1: efficient parsing, dynamic storage, full data-lifecycle management database
  - Re-architected the closed loop, improving issue-resolution turnaround from D+10 to D+3
  - Optimized the data pipeline with an automated labeling tool (4D GT): delivery from 1k → 30k intersections/month
  - Developed auto data mining & collection, cutting redundancy from 80% to 5%

DeepRoute.ai (Shenzhen) Apr 2022 – Jun 2023
Head of Static Perception Models Beijing
Core team of 4, 600 GPUs

- Delivered China's first Mapless solution in 2023 and the AITO (Wenjie) POC
- Lane-segment solution supporting urban point-to-point and highway auto-cruise; >85% pass rate at ramps and intersections
- Evolved the model: lane segment → query-based → AR-based lane detection
- **Infra**: >200M-image data mining platform, ~12M-frame auto mining; auto-balance framework for multi-task training

NIO (Shanghai) Mar 2021 – Apr 2022
Principal Engineer, Autonomous Driving Algorithms Beijing

- China's first-generation in-house AD algorithms for NIO ET7 and ES8
- Data-driven Mono3D detection-tracking model
- Data closed loop for object detection and lane detection
- Model evaluation framework for object detection, lane detection, and post-processing

UISEE Technology (Beijing) May 2019 – Apr 2020

Senior Researcher, Nanjing AI Research Institute Nanjing

- In 2019, the first in China to deploy a Shadow-Mode data closed-loop system + IL-based E2E on-vehicle
- Imitation learning, RL, data generation, and simulation for AD
- Joint 3D object detection and tracking

PUBLICATIONS

1. 3D Visual Illusion Depth Estimation. **NeurIPS 2025**
2. Diving into the Fusion of Monocular Priors for Generalized Stereo Matching. **ICCV 2025**
3. Sparse Point Guided 3D Lane Detection. **ICCV 2023**
4. Parameterized Cost Volume for Stereo Matching. **ICCV 2023**
5. FoggyStereo: Stereo Matching with Fog Volume Representation. **CVPR 2022**
6. Deep Stereo Matching with Explicit Cost Aggregation Sub-Architecture. **AAAI 2018**
7. Content-Aware Inter-Scale Cost Aggregation for Stereo Matching. **arXiv 2020**
8. DRL-based Trajectory Tracking for Motion-related Modules in Autonomous Driving. **arXiv 2023**

PATENTS

1. 3D reconstruction method, apparatus, system, and storage medium. (CN201980002779.1)
2. Image prediction and vehicle behavior planning method, apparatus, system, and storage medium. (CN202010196263.X)
3. Multi-object tracking method, apparatus, system, and storage medium. (CN201911334843.4)
4. Single-object tracking method, apparatus, system, and storage medium. (CN201911194289.4)
5. Training method and system for generative adversarial networks, electronic device, and storage medium. (CN201980002600.2)

SELECTED PROJECTS (2017 – Present)

- Occluded 3D object detection and tracking with RepPoint formulation ↗ (2019)
- Clustering-based feature disentanglement for ReID, SOT, and MOT ↗ (2020)
- Relative navigation and shadow-mode data collection with trajectory imitation ↗ (2020)
- Deep stereo matching with explicit cost aggregation ↗ (2017)
- FoggyStereo: stereo matching with fog volume representation ↗ (2022)
- Diving into the fusion of monocular priors for generalized stereo matching ↗ (2024)
- 3D visual illusion depth estimation ↗ (2025)
- Sparse point guided 3D lane detection ↗ (2025)