Keyu Chen

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 CurryChen77 | Google Scholar

Beijing, China

RESEARCH INTERESTS

My research centers on **traffic simulation and motion planning** for autonomous driving, with a particular emphasis on creating **realistic, interactive, and controllable traffic scenarios**. I am passionate about developing reliable closed-loop simulation frameworks to accelerate the safe, robust, and scalable advancement of autonomous driving.

EDUCATION

- **Tsinghua University (THU)**   *September 2023 - July 2028(Expected)*
  Ph.D. student at the School of Vehicle and Mobility.   Beijing, China
  ◦ Advisor: Prof. Sifa Zheng.

- **Nanjing University of Aeronautics and Astronautics (NUAA)**   *September 2019 - July 2023*
  B.Eng. in Vehicle Engineering.   Nanjing, China
  ◦ GPA: 4.1/5 (Top 2%)

FIRST AUTHOR PUBLICATIONS

[arXiv 2025]	RIFT: Group-Relative RL Fine-Tuning for Realistic and Controllable Traffic Simulation. **Keyu Chen**, Wenchao Sun, Hao Cheng, Sifa Zheng. Paper, Project Page, Code *RIFT achieves realistic and controllable traffic simulation by combining IL pre-training in a data-driven simulator for realism with RL fine-tuning in a physics-based simulator for controllability.*
[CoRL 2025]	FREA: Feasibility-Guided Generation of Safety-Critical Scenarios with Reasonable Adversariality. **Keyu Chen**, Yuheng Lei, Hao Cheng, Haoran Wu, Wenchao Sun, Sifa Zheng. (**Oral 4.3%**) Paper, Project Page, Code *FREA incorporates feasibility as guidance to generate adversarial yet AV-feasible, safety-critical scenarios for autonomous driving.*
[KBS 2023]	IGT: Illumination-guided RGB-T object detection with transformers. **Keyu Chen**, Jinqiang Liu, Han Zhang. (Bachelors thesis) Paper *IGT uses illumination intensity to guide the fusion process of multi-modality features, enabling the comprehensive utilization of cross-modality complementary information in object detection.*

CO-AUTHOR PUBLICATIONS

[arXiv 2025]	DriveCamSim: Generalizable Camera Simulation via Explicit Camera Modeling for Autonomous Driving. Wenchao Sun, Xuewu Lin, **Keyu Chen**, Zixiang Pei, Yining Shi, Chuang Zhang, Sifa Zheng. Paper, Code
[TRC 2025]	Emergency Index (EI): A two-dimensional surrogate safety measure considering vehicles interaction depth. Hao Cheng, Yanbo Jiang, Hailun Zhang, **Keyu Chen**, Heye Huang, Shaobing Xu, Jianqiang Wang, Sifa Zheng. Paper, Code

HONORS AND AWARDS

- **Outstanding Graduate (Top 1%), NUAA**   *June 2023*

- **Outstanding Bachelor Thesis Award (Top 5%), NUAA**   *June 2023*

- **National Scholarship (Top 1%), NUAA**   *December 2021*