Licheng Wen 温力成

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Education Background

- **Zhejiang University** *Robotics* Master of Science 2019.09 – 2022.03
- **Zhejiang University** *Control Science and Engineering* Bachelor of Engineering 2015.09 – 2019.09
- **University of California, Berkeley** *Summer Session* Exchange Student 2017.07 – 2017.09

Work Experience

- **Shanghai Artificial Intelligence Laboratory** *Researcher* 2022.05 – Present
  - Conduct research in the intelligent transportation department. Focus on resolving decision and planning problems between multiple vehicles in complex traffic scenarios. In charge of developing an novel simulation in a data closed-loop way, which revolutionized the testing process of L4+ autonomous driving systems.
  - Designed and developed a city road traffic flow simulator, LimSim. This simulator aims to provide the capability for long-term continuous simulation under city-level road networks to meet the growing needs of digital twins and autonomous driving in the traffic field. LimSim can generate high-fidelity and reliable dynamic scenes, focusing on diverse interactions of multiple vehicles in traffic flow.
- **Robotics X, Tencent** *Robotics Engineer Intern* 2021.06 – 2021.09
  - Developed a robotics modelling and control toolbox in C++. Focus on solving robot dynamics equations and model-based control planning problems. Tested and debugged the toolbox to ensure high performance and reliability in real-world applications like the quadruped robots Jamoca and Max.
- **X Lab, Inceptio** *Autonomous Driving Intern* 2021.02 – 2022.05
  - Proposed a learning-based micro-traffic flow driving model for highway scenarios, ideal for providing traffic flow simulation for autonomous driving. Trained and tested the hierarchical model using real highway driving datasets in SUMO, outperforming traditional IDM driving models.
- **Tmall Group, Alibaba** *Software Develop Engineer Intern* 2018.07 – 2018.09

Academic Research

APRIL Lab *Zhejiang University* 2019.09 – 2022.03

- Research areas include: multi-agent systems, path planning and trajectory generation, mobile robotics. Published several papers in well-known conferences/journals in the field.
- Key research achievements include: developed a multi-agent pathfinding method for heterogeneous robot systems based on a hierarchical search algorithm, effectively solving collision and spatiotemporal constraint problems; proposed a hierarchical reinforcement learning method for multi-agent formation tasks, decoupling tasks for separate optimization with excellent transferability; introduced a universal trajectory planning method applicable to both ground and marine robots.

ZJUNlict RoboCup Team *Zhejiang University* 2016.09 – 2019.09

- Core member of the software team. Primary responsibilities included AI strategy research and code development, involving multi-robot adversarial games and target tracking under high-speed motion.

Selected Publications

- **L. Wen**, D. Fu, X. Li, P. Cai, M. Dou, Y. Qiao, "DiLu: A Knowledge-Driven Approach to Autonomous Driving with Large Language Models", arXiv preprint arXiv:2309.16292, 2023.
- D. Fu, X. Li, **L. Wen**, M. Dou, P. Cai, B. Shi, Y. Qiao, "Drive Like a Human: Rethinking Autonomous Driving with Large Language Models", LLVM@AD workshop of the IEEE/CVF WACV. 2024.
- **L. Wen**, D. Fu, S. Mao, P. Cai, M. Dou and Y. Li, "LimSim: A Long-term Interactive Multi-scenario Traffic Simulator", the IEEE 26th International Conference on Intelligent Transportation Systems (ITSC), 2023.
- **L. Wen**, P. Cai, D. Fu, S. Mao, Y. Li, "Bringing diversity to autonomous vehicles: An interpretable multi-vehicle decision-making and planning framework", Proceedings of the 22nd International Conference on Autonomous Agents and MultiAgent Systems (AAMAS), 2023.
- **L. Wen**, Y. Liu and H. Li, "CL-MAPF: Multi-Agent Path Finding for Car-Like robots with kinematic and spatiotemporal constraints", Robotics and Autonomous Systems, 2022.
- S. Liu, **L. Wen**, J. Cui, X. Yang and Y. Liu, "Moving Forward in Formation: A Decentralized Hierarchical Learning Approach to Multi-Agent Moving Together", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021, pp. 4777-4784.
- **L. Wen**, J. Yan, X. Yang, Y. Liu and Y. Gu, "Collision-free Trajectory Planning for Autonomous Surface Vehicle", 2020 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM), 2020.
- For the latest and complete list of publications, please visit: https://wenlc.cn/publications/

Honors & Awards

- **RoboCup 2019, Sydney** *World Champion* 2019.06
- **RoboCup 2018, Montreal** *World Champion* 2018.08
- **Excellent project of Tmall, Alibaba Group** 2018.07
- **MCM (The Mathematical Contest in Modeling)** *Honorable Mention* 2018.02
- **Outstanding Student Leader Award, Zhejiang University** 2017.10
- **Excellent Young Volunteer, Zhejiang Province** 2016.10
- **Excellent Social Participate Scholarship, Zhejiang University** 2016.06
- **China National Olympiad in Informatics in Provinces** *First Prize* 2013/2014