LAN FENG

Ph.D. Candidate@EPFL, supervised by Prof. Alexandre Alahi

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PROFESSIONAL SUMMARY

Ph.D. candidate at EPFL specializing in generative modeling and data-centric approaches for scalable training. I develop scalable foundations for data and evaluation—such as UniTraj for cross-dataset unification and generalization analysis, and TAROT for optimal-transport-based targeted data selection—to improve robustness and transfer across domains. I also build open-source platforms and autoregressive scenario generators (ScenarioNet, TrafficGen) that produce controllable, realistic multi-agent scenes for training and safety evaluation. Beyond driving, my work includes SynH2R for synthesizing hand-object motions to scale human-to-robot handover learning and Policy Dissection for human-AI shared control, broadening my research to manipulation and interactive autonomy. My research has earned top leaderboard and challenge results (e.g., first place in the Waymo 2025 vision-based end-to-end driving track; state-of-the-art on the nuScenes prediction leaderboard via large-scale training).

EDUCATION

Ph.D. in Robotics, Control and Intelligent Systems, EPFL   2024 - 2028
Supervisor: Prof. Alexandrei Alahi

M.S. in Robotics, Systems, and Control, ETH Zurich   2021 - 2023
Thesis: SynH2R: Synthesizing Hand-Object Motions for Learning Human-to-Robot Handovers
Advisor: Otmar Hilliges

B.E. in Navigation Engineering, Wuhan University   2016 - 2020
Thesis: LSTM-based Adaptive Stride Length Estimation

AWARDS AND HONORS

China National Scholarship	2019
1st Place in Waymo Interaction Trajectory Prediction Challenge	2021
1st Place on nuScenes Prediction Leaderboard	2024
1st Place in Waymo Vision-based End-to-End Driving Challenge	2025

PUBLICATIONS

1. **Lan Feng**, Yang Gao, Eloi Zabloki, Quanyi Li, Wuyang Li, Matthieu Cord, Alexandre Alahi "Pretraining End-to-End Planners with Large-scale Synthetic Data" (In Submission)

2. Fan Nie, **Lan Feng**, Haotian Ye, Weixin Liang, Pan Lu, Huaxiu Yao, Alexandre Alahi, James Zou "Weak-for-Strong: Training Weak Meta-Agent to Harness Strong Executors" (COLM 2025)

3. **Lan Feng***, Fan Nie*, Yuejiang Liu, and Alexandre Alahi. "TAROT: Targeted Data Selection via Optimal Transport" (ICML 2025).

4. **Lan Feng***, Mohammadhossein Bahari*, Kaouther Messaoud Ben Amor, Éloi Zablocki, Matthieu Cord, and Alexandre Alahi. "UniTraj: A Unified Framework for Scalable Vehicle Trajectory Prediction." *European Conference on Computer Vision* (ECCV 24).

5. **Lan Feng***, Sammy Christen*, Wei Yang, Yu-Wei Chao, Otmar Hilliges, and Jie Song. "SynH2R: Synthesizing Hand-Object Motions for Learning Human-to-Robot Handovers." *IEEE International Conference on Robotics and Automation* (ICRA 24).

6. **Lan Feng***, Quanyi Li*, Zhenghao Peng*, Zhizheng Liu, Chenda Duan, Wenjie Mo, and Bolei Zhou. "ScenarioNet: Open-Source Platform for Large-Scale Traffic Scenario Simulation and Modeling." *Neural Information Processing Systems, Dataset & Benchmark Track* (NeurIPS 23).

7. **Lan Feng***, Quanyi Li*, Zhenghao Peng*, Shuhan Liu, Bolei Zhou. "TrafficGen: Learning to Generate Diverse and Realistic Traffic Scenarios." *IEEE International Conference on Robotics and Automation* (ICRA 23).

8. **Lan Feng**, Sammy Christen, Jie Song. "Controllable Human Grasp Generation." *European Conference on Computer Vision* (ECCV 22 workshop).

9. Quanyi Li*, Zhenghao Peng*, **Lan Feng**, Zhenghai Xue, Qihang Zhang, Bolei Zhou. "MetaDrive: Composing Diverse Driving Scenarios for Generalizable Reinforcement Learning." *IEEE Transactions on Pattern Analysis and Machine Intelligence* (TPAMI 22).

10. Quanyi Li, Zhenghao Peng, Haibin Wu, **Lan Feng**, Bolei Zhou. "Human-AI Shared Control via Frequency-based Policy Dissection." *Advances in Neural Information Processing Systems* (NeurIPS 22).

11. **Lan Feng***, Qihang Zhang*, Yicheng Liu, Fan Li, Gang Sun, Chunxiao Liu, Bolei Zhou. "IP-MMT: Interaction Prediction via MultiModal Transformer." *Computer Vision and Pattern Recognition Conference Workshop* (CVPR workshop 21).

(* indicates joint first authors)

WORK EXPERIENCES

Advanced Interactive Technologies Lab (AIT), ETH Zurich   Feb 2022 - Sep 2023
Research Assistant (Supervisor: Otmar Hilliges)

– developed a generalizable RL-based robotic dexterous grasp algorithm.

Zhou Lab, UCLA   Nov 2020 - Aug 2021
Research Assistant (Supervisor: Bolei Zhou)

– worked on the development of MetaDriverse, with a focus of data-driven traffic simulation.

– worked with Quanyi Li, Shuhan Tan, Zhenghao Peng and Bolei Zhou

SenseTime   Nov 2020 - Aug 2021
Trainee Researcher

– worked on reinforcement learning-based traffic simulation and motion prediction.

– worked with Chunxiao Liu and Bolei Zhou

TECHNICAL SKILLS

Programming Languages	Python
Deep Learning	RLlib, PyTorch-Lightning, WandB
Robotics	Isaac Gym, RaiSim
Development Tools	Git, LaTeX, Docker,VS Code