LAN FENG

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

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RESEARCH SUMMARY

I am a PhD candidate at EPFL working on efficient data and generation for physical AI. My research lowers the cost of the experience that driving and robot policies learn from, in three ways: choosing which data to train on (**TAROT**, ICML 2025; **UniTraj**, ECCV 2024), synthesizing training data at the fidelity planners need (**RAP**, ICLR 2026), and generating images and video in one to four steps (**RDM**; **PTD**, developed at **NVIDIA Research** in 2026). RAP was the basis of our **first-place entry in the 2025 Waymo End-to-End Driving Challenge** and ranked first on NAVSIM and Bench2Drive. I have also applied these ideas to LLM agents (**Weak-for-Strong**, COLM 2025) and worked on generative traffic simulation (**TrafficGen**, **ScenarioNet**) and on human-to-robot handovers with NVIDIA (**SynH2R**, ICRA 2024).

EDUCATION

Ph.D. in Robotics, Control and Intelligent Systems, EPFL 2024 - 2028
Supervisor: Prof. Alexandre Alahi Thesis topic: data selection and curation for foundation models

M.S. in Robotics, Systems, and Control, ETH Zurich 2021 - 2023
GPA: 5.67/6.0 Advisor: Otmar Hilliges
Thesis: SynH2R: Synthesizing Hand-Object Motions for Learning Human-to-Robot Handovers (with NVIDIA)

B.E. in Navigation Engineering, Wuhan University 2016 - 2020
GPA: 3.9/4.0 Thesis: LSTM-based Adaptive Stride Length Estimation

RESEARCH EXPERIENCE

NVIDIA Research, Zurich Jun 2026 - Sep 2026
Research Intern

– Developed PTD, few-step distillation for video world models: new state of the art for trajectory distillation on Wan2.1-14B, and four-step generation for the 33B audio-video MiniMax-H3 with LoRA alone (under review).
– Worked with Peter Karkus, Maximilian Igl, Yuxiao Chen, Boris Ivanovic and Marco Pavone.

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.
– Master's thesis SynH2R (ICRA 2024), in collaboration with NVIDIA (Wei Yang, Yu-Wei Chao).

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

– Data-driven traffic simulation for MetaDriverse, including TrafficGen (ICRA 2023), with Quanyi Li, Shuhan Tan and Zhenghao Peng.

SenseTime Nov 2020 - Aug 2021
Trainee Researcher

– Reinforcement learning-based traffic simulation and motion prediction, with Chunxiao Liu and Bolei Zhou.

AWARDS AND HONORS

1st Place in Waymo Vision-based End-to-End Driving Challenge ($10,000 grant) 2025
1st Place on NAVSIM v1/v2 and Bench2Drive Leaderboards (RAP) 2025
1st Place on nuScenes Prediction Leaderboard 2024
1st Place in Waymo Interaction Trajectory Prediction Challenge ($12,000 grant) 2021
China National Scholarship 2019

PUBLICATIONS

Peer-reviewed

1. Wuyang Li, Yang Gao, Mariam Hassan, **Lan Feng**, Wentao Pan, Po-Chien Luan, Alexandre Alahi. "EverAnimate: Minute-Scale Human Animation via Latent Flow Restoration." *NeurIPS 2026*.
2. **Lan Feng**, Yang Gao, Éloi Zablocki, Quanyi Li, Wuyang Li, Sichao Liu, Matthieu Cord, Alexandre Alahi. "RAP: 3D Rasterization Augmented End-to-End Planning." *ICLR 2026*.
3. 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*.
4. **Lan Feng***, Fan Nie*, Yuejiang Liu, Alexandre Alahi. "TAROT: Targeted Data Selection via Optimal Transport." *ICML 2025*.
5. **Lan Feng***, Mohammadhossein Bahari*, Kaouther Messaoud Ben Amor, Éloi Zablocki, Matthieu Cord, Alexandre Alahi. "UniTraj: A Unified Framework for Scalable Vehicle Trajectory Prediction." *ECCV 2024*.
6. **Lan Feng***, Sammy Christen*, Wei Yang, Yu-Wei Chao, Otmar Hilliges, Jie Song. "SynH2R: Synthesizing Hand-Object Motions for Learning Human-to-Robot Handovers." *ICRA 2024*.
7. **Lan Feng***, Quanyi Li*, Zhenghao Peng*, Zhizheng Liu, Chenda Duan, Wenjie Mo, Bolei Zhou. "ScenarioNet: Open-Source Platform for Large-Scale Traffic Scenario Simulation and Modeling." *NeurIPS 2023 Datasets and Benchmarks Track*.
8. **Lan Feng***, Quanyi Li*, Zhenghao Peng*, Shuhan Tan, Bolei Zhou. "TrafficGen: Learning to Generate Diverse and Realistic Traffic Scenarios." *ICRA 2023*.
9. Quanyi Li*, Zhenghao Peng*, **Lan Feng**, Qihang Zhang, Zhenghai Xue, Bolei Zhou. "MetaDrive: Composing Diverse Driving Scenarios for Generalizable Reinforcement Learning." *IEEE TPAMI 2022*.
10. Quanyi Li, Zhenghao Peng, Haibin Wu, **Lan Feng**, Bolei Zhou. "Human-AI Shared Control via Policy Dissection." *NeurIPS 2022*.
11. **Lan Feng**, Sammy Christen, Jie Song. "Controllable Human Grasp Generation." *ECCV 2022 Workshops*.
12. **Lan Feng***, Qihang Zhang*, Yicheng Liu, Fan Li, Gang Sun, Chunxiao Liu, Bolei Zhou. "IP-MMT: Interaction Prediction via MultiModal Transformer." *CVPR 2021 Workshops*.

Preprints

13. **Lan Feng**, Peter Karkus, Maximilian Igl, Julius Berner, Yuxiao Chen, Shuhan Tan, Alexandre Alahi, Boris Ivanovic, Marco Pavone. "Parametric Trajectory Distillation for Few-Step Video Generation." *arXiv:2610.11498*, 2026, under review (NVIDIA internship).
14. **Lan Feng**, Wuyang Li, Éloi Zablocki, Matthieu Cord, Alexandre Alahi. "Representation Distribution Matching for One-Step Visual Generation." *arXiv:2607.02375*, 2026.
15. Weijiang Xiong, **Lan Feng**, Alexandre Alahi, Nikolas Geroliminis. "SkyDrive: Learning to Drive in a New City from Aerial Traffic Monitoring." *arXiv:2608.25142*, 2026.
16. Quanyi Li, **Lan Feng**, Haonan Zhang, Wuyang Li, Letian Wang, Alexandre Alahi, Harold Soh. "Grounded World Model: Latent Planning with Language Goals." *arXiv:2604.11751*, 2026.
17. Yang Gao, Po-Chien Luan, Kaouther Messaoud, **Lan Feng**, Alexandre Alahi. "OmniTraj: Pre-Training on Heterogeneous Data for Adaptive and Zero-Shot Human Trajectory Prediction." *arXiv:2507.23657*, 2025.

(* indicates joint first authors)

TECHNICAL SKILLS

Programming Languages	Python, LaTeX
Deep Learning	PyTorch, PyTorch-Lightning, Hugging Face, WandB, RLlib
Generative Models	Diffusion / flow models, few-step distillation, LoRA (up to 33B)
Driving Data / Benchmarks	Waymo Open Dataset, nuScenes, Argoverse, NAVSIM, Bench2Drive
Robotics / Simulation	Isaac Gym, RaiSim, MetaDrive, ScenarioNet
LLM / Agents	OpenAI / Anthropic APIs
Development Tools	Git, Docker, VS Code, Slurm