LAN FENG

Ph.D. Student, EPFL, supervised by Prof. Alexandre Alahi
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RESEARCH INTERESTS

I am interested in advancing deep learning methodologies through a data-centric perspective. My research explores questions such as attributing model predictions to specific training data, selecting optimal data for diverse tasks, and modeling data distributions with generative models. I am particularly focused on applying data-centric techniques to large language models (LLMs), robotics, and computer vision to improve performance with less computational resources.

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

Kwang-Hua Scholarship 2018
China National Scholarship 2019
Outstanding Undergraduate Thesis of Wuhan University 2020
1st Place in Waymo Challenge (Interaction Prediction Track) 2021

PUBLICATIONS

1. **Lan Feng***, Fan Nie*, Yuejiang Liu, and Alexandre Alahi. "TAROT: Targeted Data Selection via Optimal Transport Distance Minimization" (In Submission).
2. **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).
3. **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).
4. **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).
5. **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).
6. **Lan Feng**, Sammy Christen, Jie Song. "Controllable Human Grasp Generation." *European Conference on Computer Vision* (ECCV 22 workshop).

7. 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).
8. 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).
9. **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

Visual Intelligence for Transportation Lab (VITA), EPFL Nov 2023 - May 2024
Research Intern (Supervisor: Alexandre Alahi)

– developed a framework for cross-dataset trajectory prediction research.

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, C++
Deep Learning	RLlib, PyTorch-Lightning, WandB
Robotics	Isaac Gym, RaiSim, MANO
Development Tools	Vim, Git, LaTeX, Docker,VS Code