

# LAN FENG

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

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## RESEARCH INTERESTS

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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, aiming to uncover insights into deep learning phenomena—including scaling laws, emergence, and in-context learning.

## EDUCATION

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**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

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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

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- Lan Feng\***, Fan Nie\*, Yuejiang Liu, and Alexandre Alahi. “TAROT: Targeted Data Selection via Optimal Transport Distance Minimization” (In Submission).
- 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)*.
- 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)*.
- 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)*.
- 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)*.
- 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

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### 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

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### Programming Languages

Python, C++

### Deep Learning

RLLib, PyTorch-Lightning, WandB

### Robotics

Isaac Gym, RaiSim, MANO

### Development Tools

Vim, Git, LaTeX, Docker, VS Code