Zhejun Zhang

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https://zhejz.github.io/

Technical Skills

Scientific Skills

Deep/Machine Learning
Sequence Prediction
Computer Vision
Control Theory
Information Theory
Probability/Statistics

Programming Languages

Python, C++
LaTeX, MatLab, R

Software & Tools

Pytorch, Tensorflow
OpenCV, ROS, Eigen
Gazebo, CARLA
AWS, Slurm, LSF
Git, Bash, Docker
MS-Office, Video Editing

Languages

Chinese	native
English	proficient
German	proficient

Awards

2019 Willi Studer Prize
Best Master Student
in Dept. of ITET, ETH Zurich.

2016 ESOP Scholarship
For MSc at ETH Zurich.

2015 BSc with High Distinction
Best Bachelor Student
in Dept. of EI, TU Munich.

2012 DAAD Full Scholarship
For BSc at TU Munich.

Education

01/2020 – 05/2024 Ph.D. at ETH Zurich, Switzerland
Supervised by Prof. Luc Van Gool at Computer Vision Lab.
∘ Toyota Research on Automated Cars in Europe (TRACE).
∘ Focus on end-to-end driving and neural simulation.
∘ Policy learning, IL, RL, world models and motion prediction.

2016 – 2019 MSc at ETH Zurich, Switzerland
Dept. of Information Technology and Electrical Engineering.
∘ Focus on system & control, computer vision & deep learning.
∘ Top 1 in the ranking (Grade: 5.93/6.0).

2015 – 2016 MSc at TU Munich, Germany
Dept. of Electrical and Computer Engineering.
∘ Unfinished, ended without degree.
∘ Grade of the 1st year: 1.0/1.0.

2012 – 2015 BSc at TU Munich, Germany
Dept. of Electrical and Computer Engineering.
∘ Focus on control & communication engineering.
∘ Top 1 in the ranking (Grade: 1.03/1.0).

2006 – 2012 Shanghai Foreign Language School, China
∘ German as the first foreign language (DSD II, C1 level).

Experience

2019 R&D Engineer at Seervision AG, Zurich.
Develop cinematographic tracking algorithms for PTZ cameras.
CV and robotics: perception, estimation and optimization.

2018 Master Thesis at IFA, ETH Zurich and Seervision AG.
Supervised by Prof. John Lygeros and Dr. Nikos Kariotoglou.
Learning Cinematographic Motion Control from Videos.

2017 Research Assistant at Seervision AG, Zurich.
Prototype learning-based tracking algorithms for pan-tilt cameras.

2017 Semester Project at IDSC, ETH Zurich.
Improving the trajectory tracking of a parametrized MPC.

2016 Semester Project at IFA, ETH Zurich.
Object tracking on Arduino and a commercial gimbal.

2015 Bachelor Thesis at TU Munich.
Online Gaussian process regression paramertrized by dual
quaternions.

2014 Semester Project at TU Munich.
Real-time rendering of event-based cameras on Oculus Rift VR.

Publications

Zhang, Z., Liniger, A., Sakaridis, C., Yu, F., Van Gool, L. **(2023)** Real-Time Motion Prediction via Heterogeneous Polyline Transformer with Relative Pose Encoding. *Advances in Neural Information Processing Systems (NeurIPS).*

Zhang, Z., Liniger, A., Dai, D., Yu, F., Van Gool, L. **(2023)** TrafficBots: Towards World Models for Autonomous Driving Simulation and Motion Prediction. *International Conference on Robotics and Automation (ICRA).*

Bührer, N., Zhang, Z., Liniger, A., Yu, F., Van Gool, L. **(2023)** A Multiplicative Value Function for Safe and Efficient Reinforcement Learning. *International Conference on Intelligent Robots and Systems (IROS).*

Zhang, Z., Liniger, A., Dai, D., Yu, F., Van Gool, L. **(2021)** End-to-End Urban Driving by Imitating a Reinforcement Learning Coach. *IEEE/CVF International Conference on Computer Vision (ICCV) .*

Patents

2023 Real-Time Motion Prediction via Heterogeneous Polyline Transformer with Relative Pose Encoding.

2022 TrafficBots: Towards World Models for Autonomous Driving Simulation and Motion Prediction.

2021 End-to-End Urban Driving by Imitating a Reinforcement Learning Coach.

Student Supervision

Master Thesis

2022 Nick Bührer. Safety Critics for Safe and Efficient Reinforcement Learning.

2021 Felix Schmitt-Koopmann. Uncertainty in Reinforcement Learning with World Models.

2021 Manuel Breitenstein. Dream To Drive: Learning Latent Dynamics for Model-Based Reinforcement Learning.

Semester Project

2022 Alan Tirado Mayer. Learning-Based Autonomous Racing Path Planning from LiDAR Data.

Teaching Assistant

2023 Computer Vision and Artificial Intelligence for Autonomous Cars.