Chensheng Peng

Phone: (+86) 19176910715 Email: pesiter159@gmail.com Homepage

EDUCATION

Shanghai Jiao Tong University (SJTU) Sep. 2019 - Jun. 2023(expected)

Major: Electrical and Computer Engineering (Artificial Intelligence Field)

An undergraduate student from Department of Automation, also as a member of Zhiyuan Honors Program.

- **GPA:** 3.9 (90.4 / 100) **Rank:** 1 / 89
- Straight A's in courses concerning mathematics, programming and machine learning
- **Relevant Courses:** C++ Programming (90), Data Structure (90), Machine Learning and Knowledge Discovery (98), Robotics (95), Mathematical Analysis (91), Introduction to Pattern Recognition (94), Digital Image Processing (91)

RESEARCH EXPERIENCE

Efficient Processing of Large-Scale Point Clouds Mar. 2022 - Sep. 2022

Research intern, in Autonomous Driving Group of MSC Lab, University of California, Berkeley

- Achieved scene flow prediction from large-scale point clouds by reducing the computational complexity during feature aggregation.
- Realized real-time processing of dense point clouds by adopting a dense representation form and a kernel-based grouping technique.
- Proposed a hierarchical network for scene flow prediction, outperforming recent methods both in effectiveness and efficiency.

Neural Architecture Search with Latency Constraint Nov. 2021 - Feb. 2022

Program leader, in Ye's Lab of John Hopcroft Center for Computer Science, Shanghai Jiao Tong University

- Searched for efficient structures of neural networks for feature extraction using Neural Architecture Search (NAS) methods.
- Added latency constraint to the traditional DARTs method, aiming for less running time of neural networks.
- Built an efficient network with the searched structures and reduced the latency significantly, but without much loss of accuracy.

Multiple Object Tracking based on Camera-LiDAR Fusion Nov. 2020 - Oct. 2021

Group leader, in Intelligent Robotics and Machine Vision (IRMV) Lab, Shanghai Jiao Tong University

- Fused the features from multiple sensors for improving the performance of multi-object tracking.
- Realized effective soft feature fusion by exploring the spatial relation between LiDAR points and image pixels.
- Achieved high tracking accuracy and outperformed other baselines on the KITTI testing dataset.

PUBLICATIONS / PREPRINTS

Interactive Multi-scale Fusion of 2D and 3D Features for Multi-object Tracking

G. Wang*, **C. Peng*** , J. Zhang, and H. Wang (* indicates equal contributions)

The paper is submitted to IEEE Transactions on Intelligent Transportation Systems (T-ITS).

Efficient Scene Flow Learning for Large-scale 3D Point Clouds

C. Peng, G. Wang, X. Lo, C, Xu. M. Tomizuka, W. Zhan, and H. Wang

The paper is submitted to IEEE International Conference on Robotics and Automation (ICRA), 2023.

PROJECT EXPERIENCE

DJI RoboMaster Competition Nov 2019 - Jan 2020

Embedded System Development

- Designed, assembled, and controlled a robot car to complete specified tasks, such as item picking, image recognition, etc.
- Entered the finals and won the first prize of the second Robomaster competition of SJTU.

ByteDance Android Mobile Development Competition Oct 2021 - Dec 2021

Android App Development

- Developed an App similar to TikTok with team members using Kotlin and Java.
- Entered the finals and finally won the third prize. We can play videos, login, take photos on the developed App,

SKILLS LIST

- IT skills: Python, C / C++, Java, Kotlin, familiar with the machine learning framework PyTorch
- Languages: Chinese (native), English (fluent)

HONORS & AWARDS

Shanghai Scholarship, from Government of Shanghai City. 2021.11

Zhiyuan Honors Scholarship, from Zhiyuan College, SJTU. 2020.05

PERSONAL PROFILE

A highly-motivated student currently pursuing a BEng in automation, seeking to leverage my knowledge of deep learning to solve some realistic problems in autonomous driving. Through my two years of research experience in the laboratory, I have learned to work well under pressure while continuously meeting and exceeding the targets.