Yun Chen - Computer Science

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Education

Beijing University of Posts and Telecommunications (BUPT) 2012 – 2019

- B.S. Member of *Ye Peida Class*, Beijing Outstanding Graduates Honor. *Top 5%*
- M.S. Member of *Pattern Recognition and Intelligent System Lab*, School of Artificial Intelligence.

Experience

Uber Inc. ATG R&D Dec. 2019 – present

Research Scientist Autonomous Vehicle, Image Simulation

- Working with Prof. Raquel Urtasun and Prof. Shenlong Wang for better understanding of 3D world.
- Photorealistic **image simulation** with geometry-aware composition for self-driving.
- Map structure learning with graph neural network. New **SOTA** in Argoverse motion forecasting.

Uber Inc. ATG R&D Sep. 2018 – present

AI Resident Autonomous Vehicle, Computer Vision

- Working with Dr. Ming Liang and Bin Yang for 3D Perception tasks.
- **Depth Completion**: Densify LiDAR with image guidance, **SOTA** in KITTI.
- **3D Perception**: 3D detection, tracking with multi-sensor. New **SOTA** achieved.

Alibaba Inc. Machine Intelligence Group in DAMO Academy Mar. 2018 – Jun. 2018

Research Intern Medical Image Analysis, supervised by Dr. Xian-Sheng Hua

- The FIRST 3D R-CNN for CT/MRI, faster and more accurate than radiologist. Patent filed as first author.
- Weakly-supervised learning with limited labels and active learning for efficient labelling.

Github chenyuntc Dec. 2014 – present

Passionate Developer, Maintainer, Contributor. ↑12K star, 3K fork, 1.5K followers

- *simple-faster-rcnn-PyTorch*: The **FIRST** pure PyTorch Faster R-CNN implementation. Faster and Better.
- *PyTorch-book*: PyTorch projects like anime generation, neural style, image caption and audio processing.

Publications

- **Y. Chen***, F. Rong*, S. Duggal*, S. Wang, X. Yan, S. Manivasagam, S. Xue, R. Urtasun. GeoSim: Photorealistic Image Simulation with Geometry-Aware Composition for Self-Driving. *Under review*. Keynote at CVPR'20
- J. Tu, H. Li, X. Yan, M. Ren, **Y. Chen**, M. Liang, E. Bitar, E. Yumer, R. Urtasun. Exploring Adversarial Robustness of Multi-sensor Perception Systems in Self-driving . *Under review*
- M. Liang, B. Yang, R. Hu, **Y. Chen** and R. Urtasun. Learning lane graph representations for motion forecasting. *ECCV 2020, Oral* [*Code*]
- W. Zeng, S. Wang, R. Liao, **Y. Chen**, B. Yang, and R. Urtasun. DSDNet: Deep structured self-driving network . *ECCV 2020*
- M. Liang*, B. Yang*, W. Zeng, **Y. Chen**, R. Hu, S. Casas and R. Urtasun. PnPNet: End-to-End Perception and Prediction with Tracking in the Loop . *CVPR 2020*
- **Y. Chen**, B. Yang, M. Liang and R. Urtasun. Learning Joint 2D-3D Representations for Depth Completion. *ICCV 2019*
- M. Liang*, B. Yang*, **Y. Chen**, R. Hu and R. Urtasun. Multi-Task Multi-Sensor Fusion for 3D Object Detection. *CVPR 2019*
- **Y. Chen**, J. Chen, B. Xiao, Z. Wu, Y. Chi, X. Xie, X. HuaVolume R-CNN: Unified Framework for CT Object Detection and Instance Segmentation. *ISBI 2019*
- **Y. Chen**. PyTorch: Introduction and Practice (technical book). *Publishing House of Electronics Industry, 2018*

Honors and Awards

- Excellent Author in Publishing House of Electronics Industry. 2018
- Champion out of 967 teams in Zhihu Machine Learning Challenge. 2017.
- Beijing Outstanding Graduates. 2016
- First Prize of Beijing Mathematics Competition for University Students. 2013.
- Second Prize in North China Physics Competition for University Students. 2013
- National Encouragement Scholarship. 2012-2014

Patents

- Photorealistic Image Simulation with Geometry-Aware Composition. *Pending*. UP-01318USP2
- Learning Lane Graph Representations for Motion Forecasting. *Pending*. UP-01257USP
- Exploring Adversarial Robustness of Multi-sensor Perception Systems in Self-driving. *Pending*. UP-01379USP
- Systems and Methods for Jointly Performing Perception, Perception, and Motion Planning for an Autonomous System. *Pending*. UP-01198US
- Perception and Motion Prediction for Autonomous Devices. *Pending*. UP-01084WO

Conference Reviewing

- The IEEE Robotics and Automation Letters (RA-L)
- Asian Conference on Computer Vision (ACCV)
- Winter Conference on Applications of Computer Vision (WACV)
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
- Chinese Control Conference (CCC)

Skills

- **Programming Languages:** Python > C/CPP/CUDA/Lua > Java/Scala/Groovy
- **Deep Learning Framework:** PyTorch > Caffe > TensorFlow2 > Chainer > Torch
- **Tools:** Linux, LaTeX, Docker, HDFS, Bazel, Data Analysis, Distributed computing, [No]SQL ...