Yun Chen

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Education

Beijing University of Posts and Telecommunications (BUPT) 2016 – 2019

Master student in Pattern Recognition and Intelligent System Laboratory (PRIS)
Co-advised by Prof. Bo Xiao and Prof. Zhiqin Lin

Beijing University of Posts and Telecommunications (BUPT) 2012 – 2016

Bachelor student in Communication Engineering, rank 33/597
Member of *Ye Peida Class* and Beijing Outstanding Graduates Honor.

Experience

Uber Inc. ATG R&D Dec. 2019 –

Research Scientist Autonomous Vehicles, Computer Vision, Machine Learning

- Will focus on self-driving problems including 3D reconstruction, simulation and motion planning.

Uber Inc. ATG R&D Sep. 2018 – Dec. 2019

AI Resident Autonomous Vehicles, Computer Vision

- Working with Prof. Raquel Urtasun on multi-sensor tasks like depth completion and 3D detection.
- New **state-of-the-art** methods in depth completion and BEV/3D detection.

Alibaba Inc. Machine Intelligence, DAMO Academy Mar. 2018 – Jul. 2018

Research Intern AI Diagnosis, Computer Vision

- Working on object detection for 3D medical data on weakly-supervised learning.
- Developing unified 3D volumetric object detection frameworks with efficiency and high accuracy.

China Telecom Corp. Beijing Research Institute Dec. 2015 – May. 2016

Software-Defined Networking (SDN)

- Routing algorithm control for devices of ALU, Cisco and H3C, and network traffic monotor.
- Web UI developing and visualization of network flow.

Publications

- Anonymous Submission. *Submitted to CVPR 2020*
  M. Liang*, B. Yang*, W. Zeng, **Y. Chen**, R. Hu, S. Casas and R. Urtasun
- Anonymous Submission. *Submitted to CVPR 2020*
  W. Zeng, S. Wang, R. Liao, **Y. Chen**, B. Yang, and R. Urtasun
- Anonymous Submission. *Submitted to CVPR 2020*
  M. Liang*, B. Yang*, R. Hu*, **Y. Chen** and R. Urtasun
- Learning Joint 2D-3D Representations for Depth Completion. *ICCV 2019*
  Y. Chen, B. Yang, M. Liang and R. Urtasun (*SOTA results in KITTI depth completion.*)
- Multi-Task Multi-Sensor Fusion for 3D Object Detection. *CVPR 2019*
  M. Liang*, B. Yang*, **Y. Chen**, R. Hu and R. Urtasun (*SOTA results in KITTI 3D/BEV detection.*)
- Volume R-CNN: Unified Framework for CT Object Detection and Instance Segmentation. *ISBI 2019*
  Y. Chen, J. Chen, B. Xiao, Z. Wu, Y. Chi, X. Xie, X. Hua
- PyTorch: Introduction and Practice (technical book). *Publishing House of Electronics Industry, 2018*
  Y. Chen (*Best seller of PyTorch in China.*)

Selected Honors and Awards

Outstanding Author	Publishing House of Electronics Industry	2018
1st/963	Zhihu Machine Learning Challenge	2017
Top 5%	Beijing Outstanding Graduates	2016
First Prize	Beijing Mathematics Contest for University Students	2013
Second Prize	The parts of the National University Physics Competition	2013
Top 3%	National Encouragement Scholarship	2012-14

Selected Projects

Depth Completion Sep. 2018 - Jul. 2019

Depth completion is a task to produce a dense depth map using the given image and sparse depth. Instead of regressing the depth value in the output, I consider it as a multi-sensor fusion problem. A universal block is proposed, which consists of two domain-specific sub-networks that apply 2D convolution on image pixels and continuous convolution on 3D points, and their output features are fused bidirectionally. By stacking the proposed block, I built a network that achieved new **state-of-the-art** performance in the task.

AI Diagnosis Mar. 2018 - Jul. 2018

I've spent 4 months in Alibaba Machine Intelligence team building an automatic diagnosis platform. Existing Computer-Aided Diagnosis (CAD) methods usually involve hand-designed features that require domain expertise. I developed a new CAD system for volumetric medical data, the core of which is a unified framework called Volume R-CNN. As an end-to-end method, it performs lesion detection, instance segmentation, and diagnosis all in one model, while being **faster and more accurate than radiologists**

Technical Book on PyTorch Github Apr. 2017 - Dec. 2017

I was very honored to be invited to write a book on the PyTorch. In that book, I introduced PyTorch using Jupyter notebook to help the learner to learn interactively and implemented several interesting projects using PyTorch, including generating animes with GAN and writing poems with a neural network, image stylization with neural style transformation and so on. This book is the best-seller of PyTorch and brought me the honor of **excellent author of 2018** in the publishing house.

Simple R-CNNs Dec. 2017 - May. 2019

- A novel, anchor-free, one-stage, non-NMS, end-to-end and fast instance segmentation method on Cityscapes, on par with Mask R-CNN in *Cars*.
- A memory-efficient (3GB), minimal (4000 lines of code) , fast (6fps) implementation of Faster R-CNN achieving even higher mAP than origin paper(71.2 vs 69.9), 2K stars on Github.
- PyTorch implementation of DSOD, a detector trained from scratch and outperforming SSD. Github

Skills

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

Community Service

- Code contributor to **PyTorch** (10 commits), active in PyTorch forume, find me in PyTorch team's first-year summary (id: chenyuntc)
- **Linux lover**, ArchLinux Wiki contributor, Android geek, Raspberry Pi and OpenWrt enthusiast.
- Reviewer for **RA-L** and **CVPR**.