

JI LIN

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EDUCATION

Tsinghua University

BEng in Electronic Engineering

- GPA: 91/100
- China National Scholarship, Cai Xiong Scholarship, Spark Scientific and Technological Innovation Program

Beijing, China

Aug 2014 – June 2019

PUBLICATIONS

- [1] T. Chen, **J. Lin**, T. Lin, C. Wang, D. Zhou, S. Han, Adaptive Mixture of Low-Rank Factorizations for Compact Neural Modeling, *submitted to NIPS 2018*
- [2] Y. He*, **J. Lin***, S. Han, AMC: Automatic Model Compression and Acceleration with Reinforcement Learning, *submitted to ECCV 2018*
- [3] Y. Rao, **J. Lin**, B. Liu, J. Lu, SkeletonCNN: Affine-invariant Feature Learning for Skeleton-Based Human Analysis, *submitted to ECCV 2018*
- [4] Y. Rao, **J. Lin**, J. Lu, J. Zhou, Runtime Network Routing for Efficient Image Classification, *submitted to T-PAMI, 2018*
- [5] **J. Lin***, Y. Rao*, J. Lu, J. Zhou, Runtime Neural Pruning, *in NIPS 2017* [\[pdf\]](#)
- [6] Y. Rao, **J. Lin**, J. Lu, J. Zhou, Learning Discriminative Aggregation Network for Video-based Face Recognition, *in ICCV 2017 (spotlight presentation)* [\[pdf\]](#)
- [7] **J. Lin**, L. Ren, J. Lu, J. Feng, J. Zhou, Consistent-aware Deep Learning for Person Re-identification in a Camera Network, *in CVPR 2017 (spotlight presentation)* [\[pdf\]](#)

* Equal Contribution

RESEARCH EXPERIENCE

Google AI China Center

Remote Research Assistant to Prof. Song Han, Assistant Professor at MIT EECS

Beijing, China

Nov 2017 – Now

Automated Network Compression and Acceleration with Reinforcement Learning

- Design a framework for automatic network compression (pruning & quantization) with reinforcement learning, to find the best trade-off between performance and inference speed/model size.
- Achieve required inference speed/model size by designing specific reward function and path planning.
- Maintain certain generality for few-shot learning.

Google AI China Center

Remote Research Assistant to Dr. Chong Wang and Dr. Denny Zhou

Beijing, China

Feb 2018 – June 2018

Adaptive Mixture of Low-Rank Factorizations for Compact Neural Modeling

- Propose to use a mixture of multiple low-rank factorizations to model a large weight matrix, and the mixture coefficients are computed dynamically depending on its input.
- Our method not only improves the computation efficiency but also maintains (sometimes outperforms) its accuracy compared with the full-rank counterparts on both language modeling and image classification task.

Tsinghua University (Department of Automation)

Research Assistant to Prof. Jiwen Lu, Tsinghua Intelligent Vision Group (IVG)

Beijing, China

March 2017 – May 2017

Dynamical Network Pruning with Reinforcement Learning

- Developed a method to dynamically prune the neural network according to the difficulty of an input image at runtime, scalable to existing neural network structures.
- Modeled the pruning as a bottom-up, layer-by-layer MDP, solved by reinforcement learning. Addressed the problem of large action space and long trajectory.
- Proved the effectiveness of sample-specific inference. Achieved much better speed-accuracy tradeoff on CIFAR and ImageNet
- Paper accepted by NIPS'17 as first author

Tsinghua University (Department of Automation)

Research Assistant to Prof. Jiwen Lu, Tsinghua Intelligent Vision Group (IVG)

Beijing, China

Jan 2017 – April 2017

Combine Adversarial Learning and Metric Learning for Efficient Video Face Recognition

- Developed an aggregation method that produces few high-quality images from redundant and noisy face videos
- Combined adversarial learning and metric learning to make the generated image realistic and discriminative in the feature space, which speeds up the recognition and improves accuracy
- Paper accepted by ICCV'17 as second author (spotlight presentation)

Tsinghua University (Department of Automation)

Research Assistant to Prof. Jiwen Lu, Tsinghua Intelligent Vision Group (IVG)

Beijing, China

June 2016 – November 2016

Consistent-aware Deep Person Re-identification in a Camera Network

- Among the first attempts to address the inconsistency problem in multi-camera person re-identification
- Modeled multi-camera re-identification as an optimization problem and solved with gradient descent to eliminate the inconsistency, which also guides the back-propagation in the training phase
- Paper accepted by CVPR'17 as first author (spotlight presentation)

Tsinghua University (Department of Electronic Engineering)

Research Assistant to Prof. Yu Wang, Tsinghua EE NICS lab, co-Founder of DeePhi Technology

Beijing, China

Nov 2015 – May 2016

Deep Learning Acceleration Framework for Mobile Low-Power Platform

- Developed hardware-based inference acceleration framework for mobile low-power platform, including cell phones, drones, etc.
- Coded with OpenCL to make use of mobile embedded GPU. Built up CPU & GPU pipeline for an efficient system. Achieved faster speed and better power efficiency
- Realized a significant speed-up (up to 50x) for CNN inference. Won third prize in IEEE LPIRC'16

WORK EXPERIENCE**SenseTime Group Limited (China's leading deep learning start-up)**

Vision Researcher, Detection Team

Beijing, China

Jan 2017 – Apr 2017

- Developed algorithms on semi-supervised face detection, and more efficient training with large-scale dataset
- Explored efficient models for object detection (part of the results were deployed in real products).

Google AI China Center

AI Intern Researcher

Beijing, China

Feb 2018 – Now

- Design a framework for automatic network compression (pruning & quantization) with reinforcement learning), which is fully automated and scalable to all kinds of network structures.
- New efficient trained network compression method.

SELECTED AWARDS AND HONORS

- China National Scholarship (highest level of scholarship set by the government of China)
- Cai Xiong Scholarship (top 10 out of 3300 Tsinghua students for excellent scientific potential)
- Spark Scientific and Technological Innovation Program (top 50 out of 3300 Tsinghua students)
- Third Prize in IEEE 2016 Low Power Image Recognition Challenge (LPIRC'16)
- Annual Academic Excellent Award, 2015-2017 (top ~5% out of 262 students)
- Annual Comprehensive Excellent Award, 2015-2017 (top ~5% out of 262 students)
- First Prize in 17th Electronic Design Contest, Tsinghua University (rank No.1 in 400 entrants)
- Scholarship of Freshmen 2014, Tsinghua University (top 10 in College Entrance Exam)

ADDITIONAL INFORMATION

- Extracurricular Activities: Photography Team of Tsinghua Student Art Troupe (Mar 2015 – now), Student Union of EE Dept. (2015), Student Union of Tsinghua University (2015)
- Programming Skills: Proficient in Python, C/C++, Matlab, Java, Caffe, PyTorch, TensorFlow
- Languages: Mandarin Chinese (native), English (proficient)