Yihui He

Contact Information

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Research Interests

CNN Acceleration and Compression [1, 2, 4], Reinforcement Learning [2], Super Resolution [5], Detection [1], Depth [7], Structure from Motion, Panorama, Security Game [3], HTTP [6]

Education

University of California, Santa Babara, CA — Spring 2016

Exchange student, Computer Science, GPA 4.0/4.0

Xi'an Jiaotong University, Xi'an, China — 2014 - 2018

Bachelor, Computer Science, GPA 81.4/100 (1st/2nd/3rd year rank: 22%/4%/37%)

Publications

[1] **Yihui He**, Xiangyu Zhang, and Jian Sun. "Channel Pruning for Accelerating Very Deep Neural Networks". In: *The IEEE International Conference on Computer Vision (**ICCV**)*. Oct. 2017, pp. 1389–1397. cited by **11**, [CVF open access] [arXiv] [Code].

Under review

[2] **Yihui He** and Song Han. "ADC: Automated Deep Compression and Acceleration with Reinforcement Learning". In: *The IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**)* (2018).

[3] **Yihui He***, Xiaobo Ma*, Xiapu Luo, Jianfeng Li, Mengchen Zhao, Bo An, and Xiaohong Guan. "Vehicle Traffic Driven Camera Placement for Better Metropolis Security Surveillance". In: *IEEE Intelligent Systems (**IS**)* (2016). **Major Revision**, *Equal contribution, [arXiv].

[4] **Yihui He**, Xiangyu Zhang, and Jian Sun. "Pruning Very Deep Neural Network Channels for Efficient Inference". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**)* (2017). **Major Revision**.

[5] Yudong Liang, Ze Yang, Kai Zhang, **Yihui He**, Jinjun Wang, and Nanning Zheng. "Single Image Super-resolution via a Lightweight Residual Convolutional Neural Network". In: *IEEE Transactions on Multimedia (**TMM**)* (2017). cited by **1**, [arXiv].

[6] Hongwei Zhao, Xiaobo Ma, Shuai Li, Xiaopu Luo, Mawei Shi, and **Yihui He**. "Boosting the performance of dynamic adaptive streaming over http in bandwidth-fluctuation networks: A pid-based approach". In: *IEEE International Conference on Multimedia and Expo (**ICME**)* (2018).

Project Report

[7] **Yihui He**. *Estimated Depth Map Helps Image Classification*. May 2016. [arXiv] [Code].

Service

Reviewer for IEEE Transactions on Image Processing (**TIP**, AE: Prof. Jie Liang).

Research Experience

MIT — Oct, 2017 - Present

Research Assistant with Prof. Song Han

- Automated CNN compression [2]. Successfully compressed NASNet, MobileNet.

Johns Hopkins University — Aug, 2017 - Nov, 2017

Research Assistant with Prof. Alan Yuille

- Visual concepts for fewshot detection. Detectors emerged from visual concepts.

Megvii Inc. (Face++) Dec, 2016 - Aug, 2017

Research Intern with Dr. Xiangyu Zhang and Dr. Jian Sun

- Pruning CNN channels [1]. VGG-16 5× with negligible accuracy loss.
- Head boxes aided pedestrian detection. Distinguish overlapped pedestrians by detecting heads.
- Object detection with confidence scores on each edge of bounding box.

Xi'an Jiaotong University

Undergrad Researcher in Computer Vision and AI Lab

- Super resolution [5], supervised by Jinjun Wang.

Undergrad Researcher in Intelligent Network and Network Security Lab

- Traffic driven camera placement [3], supervised by Xiaopu Luo.
- PID-based streaming over http [6].

Baidu Big Data Lab Joint Cultivation student

- Data mining on large scale location data.

Industry Experience

Deepglint Inc. June 2016 - Aug 2016

Engineering Intern

- Gastrointestinal stromal tumor Image Segmentation.

Honors and Awards

RoboCup Junior Soccer Challenge, 3rd place	2012
RoboCup Junior Soccer Challenge, 1st place	2014
Outstanding student, Xi'an Jiaotong University	2016
Siyuan scholarship, Xi'an Jiaotong University	2016-2017

Projects

Deep Learning	pruning, U-Net, Depth, GAN, ResNet (515 stars on Github)
GPU (CUDA) and C	depthwise-conv, c compiler (44 stars on Github)
Multi-view Geometry	panorama, SfM, notes (71 stars on Github)
NLP	NER, RNN, notes (36 stars on Github)

Extracurricular

Writer in Zhihu with 3k followers

Go Amateur 2 dan