

Ligeng Zhu

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Education

Massachusetts Institute of Technology, USA

Ph.D. Student in Department of Electrical Engineering and Computer Science

Simon Fraser University, Canada

Bachelor in Department of Computing Science

Zhejiang University, China

Bachelor in Department of Computer Science.

Research Interests

Scalable & Efficient Machine Learning Design Automation Machine Learning Systems

Publications [Google Scholar \(460 citations\)](#)

Conferences

1. **HAT: Hardware-Aware Transformers for Efficient Neural Machine Translation**
Hanrui Wang*, Zhanghao Wu*, Zhijian Liu*, Han Cai, Ligeng Zhu, and Song Han
To appear in 58th Annual Conference of the Association for Computational Linguistics (ACL), 2020.
2. **Distributed Training Across the World**
Ligeng Zhu, Yao Lu, Hongzhou Lin, Yujun Lin, Song Han
Neural Information Processing Systems (NeurIPS), Workshop on Systems for ML (MLSys), 2019.
3. **Deep Leakage from Gradients.**
Ligeng Zhu, Zhijian Liu, Song Han
In *Proceeding of 33rd Conference on Neural Information Processing Systems (NeurIPS)*, 2019.
4. **Proxylessnas: Direct neural architecture search on target task and hardware.**
Han Cai, Ligeng Zhu, Song Han.
In *Proceedings of the 7th International Conference on Learning Representations (ICLR)*, 2019.
373 citations / 1089 stars on [Github](#) / Integrated into [PyTorch Hubs](#)
5. **Sparsely Aggregated Convolutional Networks.**
Ligeng Zhu, Ruizhi Deng, Michael Maire, Greg Mori, Ping Tan.
In *Proceedings of the 15th European Conference on Computer Vision (ECCV)*, 2018.
6. **Does Colour Really Matter? Evaluation via Object Classification.**
Brian Funt, Ligeng Zhu.
In *Proceedings of the 27th Color and Imaging Conference (CIC)*, 2018.
7. **Colorizing Color Images.**
Ligeng Zhu, Brian Funt.
In *Proceedings of the 30th Human Vision and Electronic Imaging (HVEI)*, 2018.
8. **Attribute Recognition from Adaptive Parts.**
Luwei Yang, Ligen Zhu, Yichen Wei, Shuang Liang, Ping Tan.
In *Proceedings of the 27th British Machine Vision Conference (BMVC)*, 2016.

Journals

1. **AutoML for Architecting Efficient and Specialized Neural Networks**
Han Cai*, Ji Lin*, , Zhijian Liu*, Yujun Lin*, Kuan Wang*, Tianzhe Wang*, Ligeng Zhu*, Song Han.
(* denotes equal contribution, sort in alphabetic order)
In *the IEEE International Symposium on Microarchitecture (Micro)*, 2019.

2. Small Object Sensitive Segmentation of Urban Street Scene With Spatial Adjacency Between Object Classes

Dazhou Guo*, Ligeng Zhu*, Yuhang Lu, Hongkai Yu, Song Wang

In the *IEEE Transactions on Image Processing (TIP)*, 2019.

Experiences

Massachusetts Institute of Technology

Sept 2018 - Aug 2019

Research Assistant@Prof. *Song Han*'s Group

Cambridge, MA, USA

- Optimizing CNN computation graph via automatic generated schedules (DAC 2020, in submission)
- Secure (NeurIPS 19) and scalable (ICLR 20, in submission) federated learning.
- Efficient neural architecture search for hardware specialization (ICLR 19).

Sensetime Inc

Jan 2018 - Aug 2018

Research Intern@Video Segmentation Group

Beijing, China

Research on color stability of videos, and modified winograd to accelerate fix-point inference.

Simon Fraser University

Sep 2015 - Aug 2018

Research Assistant

Vancouver, BC, Canada

- With Prof. *Brian Funt* at *Color Vision Lab*
 - Automatic white-balancing via Neural Networks (HVEI 18)
 - Color Importance Analysis in Deep Learning (CIC 18, PAMI)
- With Prof. *Ping Tan* at *Graphic and Vision Lab*
 - Deep learning for simultaneously localization and recognition (BMVC 16).

TuSimple Inc

May 2017 - Aug 2017

Research Intern@Autonomous Driving Group

San Diego, CA, USA

- (**Patent**): Drivable road surface generation using multimodal sensor data
- (**Patent**): Detecting taillight signals of vehicles via convolutional neural network.

Projects

Most of my research stand on the shoulders of giants named "open-source". Therefore, I embrace open-source as much as possible. [GitHub](#) ranks 2444th among all users with > 3k stars.

PyTorch-OpCounter (1.8k stars) ProxylessNAS (1.1k stars) Efficient-PyTorch (612 stars)
pytorch-memonger (352 stars) SparseNet (130 stars) fast-artistic-videos (95 stars)

Beside personal projects, I also contributed to : MXNet, PyTorch, TVM, Horovod, MMDetection.

Awards

- **Open Source Scholarship**, Simon Fraser University 2017
- **Academic Scholarship**, Simon Fraser University 2017
- **ACM-ICPC Contest Silver Medal**, Zhejiang University 2015
- **Mathematical Contest In Modeling First Prize**, Zhejiang University 2015

Academic Services

Review papers for: TPAMI / TMC / WACV 21 / ACCV 21 / NeurIPS 20 / CVPR 20 / AAAI 20 / NeurIPS 19 / ICCV 19 / CVPR 19