

HANG ZHANG

zhanghang0704@gmail.com
+1(732) 543 · 4857◇ <https://hangzhang.org>

ABOUT ME

I am Hang Zhang, an Applied Scientist at Amazon, developing state-of-the-art algorithms for computer vision. My recent work of **ResNeSt** achieves superior performance on ImageNet and significantly boosts the performance on many downstream applications when serving as the backbone network. ResNeSt achieves state-of-the-art results in object detection and instance segmentation on MS-COCO dataset, and semantic segmentation on ADE20K and Cityscapes datasets.

I am also enthusiastic in contributing to open source projects. I am the designer and creator for AutoGluon Toolkit, PyTorch Encoding Toolkit. I am also a co-creator for GluonCV Toolkit and contribute frequently to Apache MXNet. I have organized “*Everything you need to know to reproduce SoTA deep learning models*” in ICCV 2019. I am organizing a tutorial series on “*From HPO to NAS: Automated Deep Learning*” on CVPR 2020 and ECCV 2020.

[\[Homepage\]](#) [\[GitHub\]](#) [\[LinkedIn\]](#) [\[Google Scholar\]](#)

EXPERIENCE

Amazon

Technical Lead & Applied Scientist

Jan 2018 - Now

East Palo Alto, CA

- Lead the development AutoGluon – an AutoML toolkit for deep learning. Design and implemented the distributed and scalable hyper-parameter optimization system. Integrated advanced search algorithms including reinforcement learning, Bayesian optimization, and Hyperband scheduling.
- Make innovations on deep learning algorithms. My recent work of ResNeSt achieves superior performance on ImageNet and achieves state-of-the-art results in object detection and instance segmentation on MS-COCO dataset, and semantic segmentation on ADE20K and Cityscapes datasets.

Amazon Lab 126

Applied Scientist Intern

May 2017 - Aug 2017

Cupertino, CA

- Developed state-of-the-art semantic segmentation algorithm of EncNet, which is published as an oral paper (2.1%) in CVPR 2018.

NVIDIA

Deep learning Research Intern

May 2016 - Aug 2016

Holmdel, NJ

- Developed an end-to-end deep learning approach for autonomous driving.

EDUCATION

Rutgers University

Ph.D. in Electrical and Computer Engineering

Thesis Advisor: Prof. Kristin Dana

Research Interest: Computer Vision

Current GPA: 3.9/4.0

Oct 2017

Southeast University (Nanjing, China)

B.S. in School of Automation

Advisor: Junyang - Li

Outstanding Undergraduate Thesis 2013 - School of Automation, Southeast University

June 2013

PUBLICATIONS

1. **Hang Zhang**, Chongruo Wu, Zhongyue Zhang, Yi Zhu, Zhi Zhang, Haibin Lin, Yue Sun, Tong He, Jonas Muller, R. Manmatha, Mu Li, and Alexander Smola. ResNeSt: Split-Attention Networks. *arXiv preprint arXiv:2004.08955*, 2020
2. Yi Zhu, Zhongyue Zhang, Chongruo Wu, Zhi Zhang, Tong He, **Hang Zhang**, R Manmatha, Mu Li, and Alexander Smola. Improving semantic segmentation via self-training. *arXiv preprint arXiv:2004.14960*, 2020
3. **Hang Zhang**, Han Zhang, Chenguang Wang, and Junyuan Xie. Co-occurrent features in semantic segmentation. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019
4. Tong He, Zhi Zhang, **Hang Zhang**, Zhongyue Zhang, Junyuan Xie, and Mu Li. Bag of tricks to train convolutional neural networks for image classification. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019
5. Haibin Lin, **Hang Zhang**, Yifei Ma, Zhi Zhang, Sheng Zha, and Mu Li. Elastic distributed training: Learning in the limbo of resources. *arXiv preprint arXiv:1904.12043*, 2019
6. Jian Guo, He He, Tong He, Leonard Lausen, Mu Li, Haibin Lin, Xingjian Shi, Chenguang Wang, Junyuan Xie, Sheng Zha, Aston Zhang, **Hang Zhang**, Zhi Zhang, Zhongyue Zhang, and Shuai Zheng. Gluoncv and gluonnlp: Deep learning in computer vision and natural language processing. *arXiv preprint arXiv:1907.04433*, 2019
7. Parneet Kaur, **Hang Zhang**, and Kristin Dana. Photo-realistic facial texture transfer. In *Winter Conference on Applications of Computer Vision (WACV)*, 2019
8. **Hang Zhang**, Kristin Dana, Jianping Shi, Zhongyue Zhang, Xiaogang Wang, Amrbrish Tyagi, and Amit Agrawal. Context encoding for semantic segmentation. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018 (**oral**)
9. Jia Xue, **Hang Zhang**, and Kristin Dana. Deep texture manifold for ground terrain recognition. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, June 2018
10. **Hang Zhang** and Kristin Dana. Multi-style generative network for real-time transfer. *European Conference of Computer Vision Workshops(ECCVW)*, 2018
11. **Hang Zhang**. *Reflectance and texture encoding for material recognition and synthesis*. PhD thesis, Rutgers University-School of Graduate Studies, 2017
12. **Hang Zhang**, Jia Xue, and Kristin Dana. Deep ten: Texture encoding network. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, July 2017
13. Jia Xue, **Hang Zhang**, Kristin Dana, and Ko Nishino. Differential angular imaging for material recognition. In *The IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, July 2017
14. **Hang Zhang**, Kristin Dana, and Ko Nishino. Friction from reflectance: Deep reflectance codes for predicting physical surface properties from one-shot in-field reflectance. In *European Conference on Computer Vision (ECCV)*, pages 808–824. Springer, 2016
15. **Hang Zhang**, Kristin Dana, and Ko Nishino. Reflectance hashing for material recognition. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 3071–3080, 2015

TECHNICAL AWARDS

Doctoral Consortium Award (CVPR 2017)	2017
NVIDIA Hardware Grant	2016

TA/GA Professional Development Fund Award (Rutgers)	2016
Outstanding Undergraduate Thesis Award (SEU, China)	2013
Grant of Phoenix Contact (SEU, China)	2012
RoboCup: Robotics Navigation Competition 2nd Place Award (SEU, China)	2012

PROFESSIONAL SERVICES

Workshop and Tutorial Organizer

European Conference on Computer Vision (ECCV) Glasgow, 2020
 From HPO to NAS: Automatic Deep Learning.

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) Seattle, 2020
 From HPO to NAS: Hands-on Tutorial on Automatic Deep Learning.

IEEE International Conference on Computer Vision (ICCV) Seoul, 2019
 Everything You Need to Know to Reproduce SOTA Deep Learning Models:
 Hands-on Tutorial for Training SOTA Computer Vision Models.

Amazon Machine Learning Conference (AMLC) Seattle, 2018
 CNNs for Semantic Segmentation.

Reviewer for Journals:

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

IEEE Transactions on Biomedical Circuits and Systems (TbioCAS)

Computer Vision and Image Understanding (CVIU)

Program Committee and Reviewer for Conferences:

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2018 - 2020

IEEE International Conference on Computer Vision (ICCV) 2019

European Conference on Computer Vision (ECCV) 2018, 2020

IEEE Winter Conference on Applications of Computer Vision (WACV) 2018, 2019

SIGGRAPH 2018