

Han Zhang

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[\[HomePage\]](#) [\[GoogleScholar\]](#) [\[Github\]](#)

INTERESTS

Computer Vision, Deep Learning, Machine Learning, Medical Image Processing.

EDUCATION

Rutgers University, Piscataway, NJ

09/2012-Present

Ph.D. candidate in Computer Science

Advisor: Prof. Dimitris N. Metaxas

Beijing University of Posts and Telecommunications (BUPT), Beijing, China

09/2009-04/2012

M.E. in Communication and Information Systems

China Agricultural University (CAU), Beijing, China

09/2006-07/2009

B.S. in Information Science, Honors Program

WORKING EXPERIENCE

Research Intern, Google Brain, CA, USA

01/2018-05/2018

Research Intern, OpenAI, CA, USA

05/2017-08/2017

Software Engineer Intern, Core Data Science, Facebook, CA, USA

05/2016-08/2016

Software Engineer Intern, Philips Research North America, NY, USA

05/2015-08/2015

Research Intern, Lab of Media Search, National University of Singapore, Singapore

09/2011-02/2012

Software Engineer Intern, Samsung, Beijing, China

08/2010-09/2010

SELECTED PROJECTS

SAGAN: Self-Attention Generative Adversarial Networks

[\[Preprint\]](#)

Google Brain

01/2018-05/2018

- Proposed SAGAN to introduce self-attention into convolutional GANs to model long-range dependencies among image regions.
- Demonstrated that spectral normalization applied to the generator stabilizes GAN training and that TTUR speeds up training of regularized discriminators.

OT-GAN: Improving GANs Using Optimal Transport

[\[ICLR'18\]](#)

OpenAI

05/2017-08/2017

- Presented OT-GAN, a variant of generative adversarial nets incorporating primal form optimal transport into its critic.
- Defined a new metric over probability distributions, called Mini-batch Energy Distance, combining optimal transport in primal form with an energy distance defined in an adversarially learned feature space.

StackGAN: Realistic Image Synthesis with Stacked Generative Adversarial Networks

[\[ICCV'17\]](#) [\[Preprint\]](#)

CBIM, Rutgers University

08/2016-05/2017

- Novel Stacked Generative Adversarial Networks (StackGANs) are proposed for generating photo-realistic images.
- A new Conditioning Augmentation technique is introduced to stabilize the conditional GAN training and also improve the diversity of the generated samples.
- The proposed StackGAN-v1 for the first time generates 256×256 images with photo-realistic details from text.
- The StackGAN-v2 further improves the quality of generated images and stabilizes the GANs' training by jointly approximating multiple distributions.

Multimodal Deep Learning for Cervical Dysplasia Diagnosis

[MICCAI'16]

CBIM, Rutgers University

01/2016-04/2016

- Designed a deep learning framework for the task of cervical dysplasia diagnosis using multimodal information collected during patient screening visit.

Fine-grained Image Classification based on Deep Learning

[CVPR'16]

CBIM, Rutgers University

09/2015-12/2015

- Proposed a novel part proposal method which greatly improves the part detection accuracy.
- Designed new part layers in CNN network for part-based fine grained classification.

SELECTED PUBLICATIONS (* Indicates equal contribution)

1. **Han Zhang**, Ian Goodfellow, Dimitris Metaxas, Augustus Odena, Self-Attention Generative Adversarial Networks , arXiv:1805.08318
2. Tim Salimans*, **Han Zhang***, Alec Radford and Dimitris Metaxas, Improving GANs Using Optimal Transport , ICLR 2018
3. **Han Zhang***, Tao Xu*, Hongsheng Li, Shaoting Zhang, Xiaogang Wang, Xiaolei Huang, and Dimitris Metaxas, StackGAN++: Realistic Image Synthesis with Stacked Generative Adversarial Networks. , (Under TPAMI minor revision), 2018
4. Tao Xu, Pengchuan Zhang, Qiuyuan Huang, **Han Zhang**, Zhe Gan, Xiaolei Huang, and Xiaodong He, AttnGAN: Fine-Grained Text to Image Generation with Attentional Generative Adversarial Networks , CVPR 2018
5. Yuan Xue, Tao Xu, **Han Zhang**, Rodney Long, and Xiaolei Huang, SegAN: Adversarial Network with Multi-scale L1 Loss for Medical Image Segmentation , Neuroinformatics 2018.
6. **Han Zhang**, Tao Xu, Hongsheng Li, Shaoting Zhang, Xiaogang Wang, Xiaolei Huang and Dimitris Metaxas, StackGAN: Text to Photo-realistic Image Synthesis with Stacked Generative Adversarial Networks , ICCV 2017 (Oral presentations, 45/2143= 2.10%)
7. Mohamed Elhoseiny, Yizhe Zhu, **Han Zhang** and Ahmed Elgammal, Link the head to the "peak": Zero Shot Learning from Noisy Text descriptions at Part Precision , CVPR 2017
8. **Han Zhang***, Tao Xu*, Mohamed Elhoseiny, Xiaolei Huang, Shaoting Zhang, Ahmed Elgammal, and Dimitris Metaxas, SPDA-CNN: Unifying Semantic Part Detection and Abstraction for Fine-grained Recognition , CVPR 2016
9. Tao Xu*, **Han Zhang***, Xiaolei Huang, Shaoting Zhang, Dimitris Metaxas, Multimodal Deep Learning for Cervical Dysplasia Diagnosis , MICCAI 2016, (Early acceptance rate, 10%)
10. Tao Xu, **Han Zhang**, Cheng Xin, Edward Kim, L Rodney Long, Zhiyun Xue, Sameer Antani, and Xiaolei Huang., Multi-feature based Benchmark for Cervical Dysplasia Classification Evaluation , Pattern Recognition, 2016
11. **Han Zhang**, Shaoting Zhang, Kang Li and Dimitris Metaxas, Robust shape prior modeling based on Gaussian-Bernoulli Restricted Boltzmann Machine , ISBI 2014, Oral presentations
12. Jun Hu, **Han Zhang**, Anastasia Miliou, Thodoris Tsimpidis, Hazel Thornton and Vladimir Pavlovic, Categorization of Underwater Habitats Using Dynamic Video Textures , ICCV Workshop, 2013
13. Jin Yuan, Huanbo Luan, Dejun Hou, **Han Zhang**, Yan-Tao Zheng, Zheng-Jun Zha and Tat-Seng Chua, Video Browser Showdown by NUS, International Conference on Multimedia Modeling (MMM) demo, 2012

PROFESSIONAL ACTIVITIES

1. Present conditional GANs and StackGAN on ICCV 2017 Tutorials on GANs
2. Review for European Conference on Computer Vision (ECCV2018)
3. Review for IEEE International Conference on Computer Vision (ICCV 2017)
4. Review for IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2017, CVPR2018)
5. Review for International Conference on Medical Image Computing and Computer Assisted Interventions (MICCAI 2014, MICCAI 2017)
6. Review for Neurocomputing
7. Review for IEEE International Symposium on Biomedical Imaging (ISBI 2014)

TECHNICAL SKILLS

Knowledge: Machine learning, Deep Learning, Computer Vision, Optimization, Large Scale Data Processing.

Programming: C/C++, Matlab, Python, SQL, Caffe, Tensorflow, PyTorch