Boqing Gong, Ph.D.

CONTACT INFORMATION

✉ BoqingGong@gmail.com
http://boqinggong.info

EDUCATION

University of Southern California, Los Angeles, California, USA
Ph.D. in Computer Science 08/2011 – 08/2015
Thesis: Kernel Methods for Unsupervised Domain Adaptation
Thesis Committee: Fei Sha (supervisor), Gaurav Sukhatme, and Shrikanth Narayanan

University of Texas at Austin, Austin, Texas, USA
Visiting Ph.D. Student in Computer Science Summer, 2013
Host Professor: Kristen Grauman

The Chinese University of Hong Kong, Shatin, Hong Kong
M.Phil. in Information Engineering 08/2008 – 07/2010
Thesis: 3D Object Retrieval and Recognition
Thesis Committee: Xiaoou Tang (supervisor), Jianzhuang Liu, and Xiaogang Wang

University of Science and Technology of China, Hefei, Anhui, China
B.E. in Electronic Engineering and Information Science 09/2004 – 07/2008

RESEARCH INTERESTS

Computer vision and machine learning; domain adaptation, adversarial learning, self/semi-supervised/zero-shot/few-shot/long-tailed/meta learning, sequential determinantal point processes, video models and representations, neural architecture search, Transformers, vision and language, detection, segmentation, adversarial generative nets, and 3D visual learning.

APPOINTMENTS

Research Scientist 03/2019 – Present
Google Inc.
Research and productionization of computer vision and deep learning
Served on NSF panels and conference organization committees

Adjunct Lecturer 01/2021 – 04/2021
Data Science, Brown University
Taught Deep Learning (`data2040.github.io`), overall rating 4.33 (department mean 3.94)

Principal Investigator (PI) for `NSF Award #1835539` 01/2018 – 12/2020
International Computer Science Institute
University of California, Berkeley
Research on computer vision

Principal Researcher 01/2018 – 03/2019
Tencent AI Lab, USA
Research on computer vision and reinforcement learning

Assistant Professor (tenure-track) 08/2015 – 12/2017
Graduate Faculty Member 08/2015 –
Department of Computer Science
University of Central Florida
Research on computer vision and machine learning, PI for `NSF Awards 1566511` and `1741431`

Supervised five Ph.D. students and numerous master and undergraduate students
Taught advanced topics in computer vision, robot vision, etc.
Served on departmental committees, NSF panels, and conference organization committees

Summer Research Assistant 06/2013 – 08/2013
Department of Media Analytics
NEC Laboratories America
Feature engineering for large-scale, fine-grained object recognition

Research Assistant 01/2008 – 06/2008
Visual Computing Group
Microsoft Research Asia
Feature engineering for content-based image retrieval

Selected Awards and Honors

- ⋆ IEEE CVPR Outstanding Reviewer 2017, 2021
- ⋆ Tencent Senior VP's Star Award 2018
- ⋆ NSF Award: CRII #1566511 2016 – 2018
- ⋆ NSF Award: BIGDATA #1741431 2017 – 2020
- ⋆ Viterbi School of Engineering Doctoral Fellowship 2011 – 2015

Invited Talks and Tutorials

Transformers for Multimodal Signal Processing and Decision Making
A 10-hour course at Int'l Conference on Acoustics, Speech, and Signal Processing 05/26/2022

When Vision Transformers Outperform ResNets
Computer Science Colloquium Talk, University of Illinois Urbana-Champaign 03/23/2022
ACM MM 2021 Workshop: Adversarial Learning for Multimedia 10/20/2021
CVPR 2021 Workshop: Learning from Limited and Imperfect Data 06/20/2021

Data-Efficient Learning of Vision Transformers
ACML 2021 Workshop: Weakly Supervised Learning 11/16/2021
Rutgers University Efficient AI Seminar 08/10/2021

Long-Tailed Visual Recognition in the Wild: A Tutorial
IJCAI 2021 Workshop: Long-Tailed Distribution Learning 08/21/2021
CVPR 2021 Tutorial: Data- and Label-Efficient Learning in An Imperfect World 06/19/2021

Long-Tailed Visual Recognition in the Wild
ECCV 2020 Workshop on Imbalance Problems in Computer Vision 08/28/2020

Towards Visual Recognition in the Wild: Long-Tailed Sources and Open Compound Targets
Center for Language and Speech Processing at Johns Hopkins University 12/04/2020
Computer Vision Group at University of Bristol 10/13/2020
Visual Informatics Group at University of Texas, Austin 09/11/2020
IEEE CVPR 2020 Workshops on Learning from Imperfect Data 06/14/2020
IEEE CVPR 2020 Workshop on Adversarial Machine Learning in Computer Vision 06/19/2020

Long-Tailed Visual Recognition is A Domain Adaptation Problem

WACV Workshop on Vision Applications and Solutions to Biased or Scarce Data 03/05/2020

Google Research Conference 02/26/2020

IEEE CVPR 2020 Area Chair Workshop 01/24/2020

$\mathcal{N}$Attack by Learning the Distributions of Adversarial Examples

Vision and Learning Seminar (VALSE) 09/25/2019

IEEE CVPR Workshop on GigaVision 06/17/2019

Waymo Inc. 06/05/2019

Department of Computer Science, UC Davis 05/17/2019

Sequential Determinantal Point Processes: Models, Algorithms, and Applications

CVPR Tutorial on Recent Advances in Visual Data Summarization 06/16/2019

Curriculum Domain Adaptation

IEEE BIGDATA Workshop on Big Data Transfer Learning 12/10/2018

The Multiple Shades of Dropout for Discriminative and Generative Deep Neural Networks

INFORMS Special Session on Stochastic Optimization Methods and Approximation Theory in Machine Learning 11/04/2018

Domain Adaptation and Transfer: All You Need to Use Simulation "for Real"

ECCV Workshop on Visual Learning and Embodied Agents in Simulation Environments 09/09/2018

Learning and Adapting from the Web for Visual Recognition

ECCV Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision 09/09/2018

IEEE CVPR Workshop on Visual Understanding by Learning from Web Data 06/18/2018

Domain Adaptation for Robust Visual Recognition and Semantic Segmentation

The Computer Vision Group at University of California, Merced 10/26/2020

Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences 04/02/2018

Shenzhen University 03/26/2018

International Computer Science Institute, UC Berkeley 12/08/2017

Beijing University of Posts and Telecommunications 11/06/2017

Department of Electrical Engineering, UC Santa Cruz 10/25/2017

Google Research at Mountain View 09/20/2017

Department of Media Analytics, NEC Laboratories America 05/08/2017

NVIDIA Research 06/08/2017

Sequential Determinantal Point Processes for Supervised Video Summarization

Department of Computer Science, Stanford University 03/20/2017

Adobe Systems Inc. 03/30/2017

Facebook Inc. 06/07/2017

University of California at Berkeley 08/24/2017

Domain Adaptation for Human Activity Recognition and Summarization

Army Research Office / Information Science Institute Workshop on Multi-Modal Data Analysis for Human Activity Detection and Understanding 09/13/2016

Query-Focused Extractive Video Summarization

Electrical Engineering and Computer Sciences, Univ. California at Berkeley 09/21/2017

Department of Computer Science, University of California at Irvine 07/08/2016

Snapchat Inc. 08/18/2016

Kernel Methods for Unsupervised Domain Adaptation

Information Science Institute, University of Southern California 12/11/2015

Department of Computer Science, Tulane University 04/23/2015

Department of Machine Learning, NEC Laboratories America 04/09/2015

Department of EECS, University of Central Florida 04/07/2015

School of Computing, Informatics, and Decision Systems Engineering, ASU 04/02/2015

IBM T.J. Watson Research Center (colloquium) 01/15/2015

ECCV Workshop on TASK-CV 09/12/2014

Reshaping Datasets for Unsupervised Domain Adaptation

IEEE ICDM Workshop on Practical Transfer Learning 11/14/2015

Sequential Determinantal Point Process: Modeling the Diverse and Sequential Properties in Video Summarization

Department of EECS, University of Central Florida 07/08/2015

Discriminative Kernel Learning for Unsupervised Domain Adaptation

Machine Learning and Instrument Autonomy Group, JPL, NASA 01/09/2014

Academic & Professional Services

National Science Foundation panelist

2021 (3 panels), 2020 (2), 2019 (1), 2017 (1), 2016 (3)

Program co-chair

IEEE Winter Conference on Applications of Computer Vision (WACV) 2023

CVPR Workshop on Multi-Modal Learning from Videos 2019

Google Pre-CVPR 2020 Workshop 2020

Google Mobile Vision Workshop 2020

Tutorial co-chair

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2022

Meta reviewer / Senior area chair

Association for the Advancement of Artificial Intelligence Conference (AAAI) 2020 – 2021

International Joint Conference on Artificial Intelligence (IJCAI) 2021

Area chair

International Conference on Learning Representations (ICLR) 2021 – 2022

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2020, 2022

European Conference on Computer Vision (ECCV) 2020

Neural Information Processing Systems (NeurIPS)	2019 – 2021
IEEE International Conference on Computer Vision (ICCV)	2019, 2021
IEEE Winter Conference on Applications of Computer Vision (WACV)	2018 – 2020
International Conference on Machine Learning (ICML)	2019 – 2023
International Conference on Artificial Intelligence and Statistics (AISTATS)	2019

Mentor: WACV 2018 Ph.D. Forum and ICCV 2021 Doctoral Consortium

Reviewer

Neural Information Processing Systems (NeurIPS)	2014 –
International Conference on Machine Learning (ICML)	2015 –
IEEE Conference on Computer Vision and Pattern Recognition (CVPR)	2013 –
European Conference on Computer Vision (ECCV)	2014 –
IEEE International Conference on Computer Vision (ICCV)	2013 –
Conference on Artificial Intelligence and Statistics (AISTATS)	2017 –
International Conference on Learning Representations (ICLR)	2017 –
Asian Conference on Computer Vision (ACCV)	2016 –
The British Machine Vision Conference (BMVC)	2017 –
Journal of Machine Learning Research (JMLR)	
Springer International Journal of Computer Vision (IJCV)	
IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)	
IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)	
IEEE Transactions on Image Processing (T-IP)	
IEEE Transactions on Multimedia (T-MM)	
Springer Machine Learning	
Artificial Intelligence	
IET Computer Vision	
Elsevier Waste Management	
ACM Transactions on Multimedia (ACM TOMM)	

Departmental Services

Faculty Search Committee, University of Central Florida (UCF)	2017 – 2018
Awards Committee, College of Engineering and Computer Science, UCF	2017 – 2018
CRCV Research Associate Search Committee	2016
Nielsen Fellowship Search Committee	2016

Publications

Statistics as of June 4th, 2022 according to Google Scholar:
Citations: 9381 h-index: 43 i10-index: 69 citations to (CVPR'12) [C4]: 2132

= Equal contribution * Students I (co-)supervised Last author ≈ Principal investigator

Invited Book Chapters

[B2] **B. Gong**, K. Grauman, and F. Sha. "Geodesic Flow Kernel and Landmarks: Kernel Methods for Unsupervised Domain Adaptation." In *Domain Adaptation for Computer Vision Applications*, Springer Publishing, 2017.

[B1] C. Gan*, T. Yang, and **B. Gong**. "A Multi-Source Domain Generalization Approach to Visual Attribute Detection." In *Domain Adaptation for Computer Vision Applications*, Springer Publishing, 2017.

Journal Publications

[J5] S. Changpinyo, W.-L. Chao, **B. Gong**, and F. Sha. "Classifier and Exemplar Synthesis for Zero-Shot Learning." *International Journal of Computer Vision* (**IJCV**), 2019.

[J4] Y. Zhang*, P. David, F. Hassan, and **B. Gong**. "A Curriculum Domain Adaptation Approach to the Semantic Segmentation of Urban Scenes." *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**T-PAMI**), 2019.

[J3] A. Mazaheri*, **B. Gong**, and M. Shah. "Learning a Multi-Concept Video Retrieval Model with Multiple Latent Variables." *ACM Transactions on Multimedia Computing, Communications, and Applications* (**TOMM**), Vol. 14, Issue 2, May 2018.

[J2] **B. Gong**, K. Grauman, and F. Sha. "Learning Kernels for Unsupervised Domain Adaptation with Applications to Visual Object Recognition." *International Journal of Computer Vision* (**IJCV**), Vol. 109, Issue 1-2, pp. 3-27, August 2014. [`Link`]

[J1] **B. Gong**, J. Liu, X. Wang, and X. Tang. "Learning Semantic Signatures for 3D Object Retrieval." *IEEE Transactions on Multimedia* (**T-MM**), Vol. 5, Issue 2, pp. 369-377, February 2013.

Peer-Reviewed Conference Publications

[C69] X. Chen, C.-J. Hsieh, and **B. Gong**. "When Vision Transformers Outperform ResNets without Pre-training or Strong Data Augmentations." *Proceedings of the International Conference on Learning Representations* (**ICLR**), Virtual, April 2022. (**Sportlight**)

[C68] J. Zhuang, **B. Gong**, L. Yuan, Y. Cui, H. Adam, N.C. Dvornek, S. Tatikonda, J.S. Duncan, and T. Liu. "Surrogate Gap Minimization Improves Sharpness-Aware Training." *Proceedings of the International Conference on Learning Representations* (**ICLR**), Virtual, April 2022.

[C67] C.-H. Yao, **B. Gong**, H. Qi, Y. Cui, Y. Zhu, and M.-H. Yang. "Federated Multi-Target Domain Adaptation." *Proceedings of the Winter Conference on Applications of Computer Vision* (**WACV**), Waikoloa, HI, Jan 2022.

[C66] L. Yuan, R. Qian, Y. Cui, **B. Gong**, F. Schroff, M-H. Yang, H. Adam, and T. Liu. "Contextualized Spatio-Temporal Contrastive Learning with Self-Supervision." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), June 2022.

[C65] A. Akula, S. Changpinyo, **B. Gong**, P. Sharma, S.-C. Zhu, and R. Soricut. "CrossVQA: Scalably Generating Benchmarks for Systematically Testing VQA Generalization." *Proceedings of the Conference on Empirical Methods in Nautral Language Processing* (**EMNLP**), Virtual, November 2021.

[C64] A. Iscen, A. Araujo, **B. Gong**, and C. Schmid. "Class-Balanced Distillation for Long-Tailed Visual Recognition." *Proceedings of the British Machine Vision Conference* (**BMVC**), Virtual, November 2021.

[C63] H. Akbari, L. Yuan, R. Qian, W.-H. Chuang, S.F. Chang, Y. Cui, and **B. Gong**. "VATT: Transformers for Multimodal Self-Supervised Learning from Raw Video, Audio and Text." *Proceedings of the Neural Information Processing Systems* (**NeurIPS**), Virtual, December 2021.

[C62] T.-Y. Pan, C. Zhang, Y. Li, H. Hu, D. Xuan, S. Changpinyo, **B. Gong**, and W.-L. Chao. "On Model Calibration for Long-Tailed Object Detection and Instance Segmentation." *Proceedings of the Neural Information Processing Systems* (**NeurIPS**), Virtual, December 2021.

[C61] M. A. Jamal*, L. Wang, and **B. Gong**. "A Lazy Approach to Long-Horizon Gradient-Based Meta-Learning." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Virtual, October 2021.

[C60] C. Zhang, T.-Y. Pan, Y. Li, H. Hu, D. Xuan, S. Changpinyo, **B. Gong**, and W.-L. Chao. "MosaicOS: A Simple and Effective Use of Object-Centric Images for Long-Tailed Object Detection." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Virtual, October 2021.

[C59] X. Zhao, R. Vemulapalli, PA Mansfield, **B. Gong**, B. Green, L. Shapira, and Y. Wu. "Contrastive Learning for Label Efficient Semantic Segmentation." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Virtual, October 2021.

[C58] JW Shin, HB Lee, **B. Gong**, and SJ Hwang. "Large-Scale Meta-Learning with Continual Trajectory Shifting." *Proceedings of the International Conference on Machine Learning* (**ICML**), Virtual, July 2021.

[C57] D. Kondratyuk, L. Yuan, Y. Li, L. Zhang, M. Tan, M. Brown, and **B. Gong**. "MoViNets: Mobile Video Networks for Efficient Video Recognition." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C56] Y. Li*, X. Jia, R. Sang, Y. Zhu, B. Green, L. Wang, and **B. Gong**. "Ranking Neural Checkpoints." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C55] X. Chen, C. Xie, M. Tan, L. Zhang, C.J. Hsieh, and **B. Gong**. "Robust and Accurate Object Detection via Adversarial Learning." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C54] L. Yi, **B. Gong**, and T. Funkhouser. "Complete & Label: A Domain Adaptation Approach to Semantic Segmentation of LiDAR Point Clouds." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C53] X. Fan, Q. Wang, J. Ke, F. Yang, **B. Gong**, and M. Zhou. "Adversarially Adaptive Normalization for Single Domain Generalization." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C52] R. Qian=, T. Meng=, **B. Gong**, M.H. Yang, H. Wang, S. Belongie, and Y. Cui. "Spatiotemporal Contrastive Video Representation Learning." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Virtual, June 2021.

[C51] Y. Ding, L. Wang, and **B. Gong**. "Analyzing Deep Neural Network's Transferability via Frechet Distance." *Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision* (**WACV**), Remote, January 2021.

[C50] Y. Li*, D. Huang, D. Qin, and **B. Gong**. "Improving Object Detection with Selective Self-Supervised Self-training." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Remote, August 2020.

[C49] M. Jamal*, M. Brown, L. Wang, M.H. Yang, and **B. Gong**. "Rethinking Class-Balanced Methods for Long-Tailed Visual Recognition from a Domain Adaptation Perspective." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Seattle, WA, June 2020. (**Oral**)

[C48] D. Wang=, Y. Li=*, L. Wang, and **B. Gong**. "Neural Networks Are More Productive Teachers Than Human Raters: Active Mixup for Data-Efficient Knowledge Distillation from a Blackbox Model." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Seattle, WA, June 2020. (**Oral**)

[C47] Z. Liu=, Z. Miao=, X. Pan, X. Zhan, D. Lin, S. Yu, and **B. Gong**. "Open Compound Domain Adaptation." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Seattle, WA, June 2020. (**Oral**)

[C46] C. Xie, M. Tan, **B. Gong**, J. Wang, A. Yuille, and Q.V. Le. "Adversarial Examples Improve Image Recognition." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Seattle, WA, June 2020.

[C45] Y. Zhang=*, Z. Zhou=, P. David, X. Yue, Z. Xi, **B. Gong**, and H. Foroosh. "PolarNet: An Improved Grid Representation for Online LiDAR Point Clouds Semantic Segmentation." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Seattle, WA, June 2020.

[C44] R. Zhai, C. Dan, D. He, H. Zhang, **B. Gong**, P. Ravikumar, C.-J. Hsieh, and L. Wang. "MACER: Attack-free and Scalable Robust Training via Maximizing Certified Radius." *Proceedings of the International Conference on Learning Representations* (**ICLR**), Addis Ababa Ethiopia, April 2020.

[C43] C. Gan=, Y. Zhang=, J. Wu, **B. Gong**, and J. Tenenbaum. "Look, Listen, and Act: Towards Audio-Visual Embodied Navigation." *Proceedings of the International Conference on Robotics and Automation* (**ICRA**), Paris, France, June 2020.

[C42] Z. Yang, **B. Gong**, L. Wang, W. Huang, D. Yu, and J. Luo. "A Fast and Accurate One-Stage Approach to Visual Grounding." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Seoul, Korea, October 2019. (**Oral**)

[C41] X. Yue, Y. Zhang, S. Zhao, A. Sangiovanni-Vincentelli, K. Keutzer, and **B. Gong**. "Domain Randomization and Pyramid Consistency: Simulation-to-Real Generalization without Accessing Target Domain Data." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Seoul, Korea, October 2019.

[C40] Q. Lian, F. Lv, L. Duan, and **B. Gong**. "Constructing Self-motivated Pyramid Curriculums for Cross-Domain Semantic Segmentation: A Non-Adversarial Approach." *Proceedings of the International Conference on Computer Vision* (**ICCV**), Seoul, Korea, October 2019.

[C39] G. Shen, W. Huang, C. Gan, M. Tan, J. Huang, W. Zhu, and **B. Gong**. "Facial Image-to-Video Translation by a Hidden Affine Transformation." *Proceedings of the 27th ACM international conference on Multimedia* (**MM**), Nice, France, October 2019.

[C38] Y. Li*, L. Li, L. Wang, T. Zhang, and **B. Gong**. "NATTACK: Learning the Distributions of Adversarial Examples for an Improved Black-Box Attack." *Proceedings of the International Conference on Machine Learning* (**ICML**), Long Beach, CA, June 2019. (**Oral**)

[C37] Z. Liu, Z. Miao, X. Zhan, J. Wang, **B. Gong**, and S. Yu. "Large-scale Long-Tailed Recognition in an Open World." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Long Beach, CA, June 2019. (**Oral**)

[C36] J. Shi, J. Xu, **B. Gong**, and C. Xu. "Not All Frames Are Equal: Weakly-Supervised Video Grounding with Contextual Similarity and Visual Clustering Losses." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Long Beach, CA, June 2019.

[C35] X. Tang, **B. Gong**, Y. Yu, H. Yao, Y. Li, H. Xie, and X. Wang. "Joint Modeling of Dense and Incomplete Trajectories for Citywide Traffic Volume Inference." *Proceedings of The Web Conference* (**WWW**), San Francisco, CA, May 2019. (**Oral**)

[C34] Y. Zhang*, H. Foroosh, P. David, and **B. Gong**. "CAMOU: Learning Physical Vehicle Camouflages to Adversarially Attack Detectors in the Wild." *Proceedings of The International Conference on Learning Representations* (**ICLR**), New Orleans, LA, May 2019.

[C33] M. Fang, C. Zhou, B. Shi, **B. Gong**, J. Xu, and T. Zhang. "DHER: Hindsight Experience Replay for Dynamic Goals." *Proceedings of The International Conference on Learning Representations* (**ICLR**), New Orleans, LA, May 2019.

[C32] D. Zhu, Z. Lin, X. Wang, **B. Gong**, and T. Yang. "A Robust Zero-Sum Game Framework for Pool-based Active Learning." *Proceedings of The International Conference on Artificial Intelligence and Statistics* (**AISTATS**), Naha, Japan, April 2019.

[C31] L. Fan, W. Huang, C. Gan, J. Huang, and **B. Gong**. "Controllable Image-to-Video Translation: A Case Study on Facial Expression Generation." *Proceedings of The Thirty-Third AAAI Conference on Artificial Intelligence* (**AAAI**), Hawaii, January 2019. (**Oral**)

[C30] L. Li* and **B. Gong**. "End-to-End Video Captioning with Multitask Reinforcement Learning." *Proceedings of the IEEE Winter Conference on Applications of Computer Vision* (**WACV**), Hawaii, January 2019.

[C29] Z. He, **B. Gong**, and D. Fan. "Optimize Deep Convolutional Neural Network with Ternarized Weights and High Accuracy." *Proceedings of the IEEE Winter Conference on Applications of Computer Vision* (**WACV**), Hawaii, January 2019.

[C28] H. Hu=, L. Chen=, **B. Gong**, and F. Sha. "Synthesize Policies for Transfer and Adaptation across Environments and Tasks." *Proceedings of the Neural Information Processing Systems* (**NeurIPS**), Montreal, Canada, December 2018. (**Spotlight**)

[C27] Y. Li*, L. Wang, T. Yang, and **B. Gong**. "How Local is the Local Diversity? Reinforcing Sequential Determinantal Point Processes with Dynamic Ground Sets for Supervised Video Summarization." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Munich, Germany, September 2018.

[C26] A. Sharghi*, A. Borji, C. Li, T. Yang, and **B. Gong**. "Improving Sequential Determinantal Point Processes for Supervised Video Summarization." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Munich, Germany, September 2018.

[C25] MA. Jamal*, H. Li, and **B. Gong**. "Face Detector Adaptation without Negative Transfer or Catastrophic Forgetting." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Salt Lake City, Utah, June 2018.

[C24] L. Fan*=, W. Huang=, C. Gan, S. Ermon, **B. Gong**, and J. Huang. "End-to-End Learning of Motion Representation for Video Understanding." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Salt Lake City, Utah, June 2018. (**Spotlight**)

[C23] C. Gan*, **B. Gong**, H. Su, and L. Guibas. "Geometry-Guided CNN for Self-Supervised Video Representation Learning." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Salt Lake City, Utah, June 2018.

[C22] X. Wei*=, **B. Gong**=, Z. Liu, W. Lu, and L. Wang. "Improving the Improved Training of Wasserstein GANs: A Consistency Term and Its Dual Effect." *Proceedings of the International Conference on Learning Representations* (**ICLR**), Vancouver Canada, April 2018.

[C21] Y. Ding*, L. Wang, D. Fan, and **B. Gong**. "A Semi-Supervised Two-Stage Approach to Learning from Noisy Labels." *Proceedings of the IEEE Winter Conference on Applications of Computer Vision* (**WACV**), Lake Tahoe, NV, March 2018. (**Spotlight**)

[C20] Z. Yang*, **B. Gong**, and S. Narayanan. "Weighted Geodesic Flow Kernel for Interpersonal Mutual Influence Modeling and Emotion Recognition in Dyadic Interactions." *Proceedings of the International Conference on Affective Computing and Intelligent Interaction* (**ACII**), San Antonio, TX, October 2017. (**Oral**)

[C19] Y. Zhang*, P. David, and **B. Gong**. "Curriculum Domain Adaptation for Semantic Segmentation of Urban Scenes." *Proceedings of the IEEE International Conference on Computer Vision* (**ICCV**), Venice, Italy, October 2017.

[C18] C. Gan*, Y. Li*, H. Li, C. Sun, and **B. Gong**. "VQS: Linking Segmentations to Questions and Answers for Supervised Attention in VQA and Question-Focused Semantic Segmentation." *Proceedings of the IEEE International Conference on Computer Vision* (**ICCV**), Venice, Italy, October 2017.

[C17] A. Sharghi*, J. Laurel*, and **B. Gong**. "Query-Focused Video Summarization: Dataset, Evaluation, and A Memory Network Based Approach." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Honolulu, Hawaii, Jun. 2017.

[C16] M. Kalayeh*, **B. Gong**, and M. Shah. "Improving Facial Attribute Prediction using Semantic Segmentation." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Honolulu, Hawaii, Jun. 2017.

[C15] Z. Li*, **B. Gong**, and T. Yang. "Improved Dropout for Shallow and Deep Learning." *Proceedings of the Neural Information Processing Systems* (**NIPS**), Barcelona, Spain, Dec. 2016.

[C14] C. Gan*, C. Sun, L. Duan, and **B. Gong**. "Labeling-Free Video Recognition by Mutually Voting for Relevant Web Images and Web Video Frames." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Amsterdam, Netherlands, Oct. 2016.

[C13] A. Sharghi*, **B. Gong**, and M. Shah. "Query-Focused Extractive Video Summarization." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Amsterdam, Netherlands, Oct. 2016.

[C12] W-L. Chao=, S. Changpinyo=, **B. Gong**, and F. Sha. "An Empirical Study and Analysis of Generalized Zero-Shot Learning for Object Recognition in the Wild." *Proceedings of the European Conference on Computer Vision* (**ECCV**), Amsterdam, Netherlands, Oct. 2016. (**Spotlight**)

[C11] Y. Zhang*, **B. Gong**, and M. Shah. "Fast Zero-Shot Image Tagging." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Las Vegas, NV, Jun. 2016.

[C10] C. Gan*, T. Yang, and **B. Gong**. "Learning Attributes Equals Multi-Source Domain Generalization." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Las Vegas, NV, Jun. 2016. (**Spotlight**)

[C9] S. Changpinyo=, W. Chao=, **B. Gong**, and F. Sha. "Synthesized Classifiers for Zero-Shot Learning." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Las Vegas, NV, Jun. 2016. (**Oral**)

[C8] W. Chao=, **B. Gong**=, F. Sha, and K. Grauman. "Large-Margin Determinantal Point Processes." *Proceedings of the Conference on Uncertainty in Artificial Intelligence* (**UAI**), Amsterdam, Netherlands, July 2015. [`Link`]

[C7] **B. Gong**=, W. Chao=, K. Grauman, and F. Sha. "Diverse Sequential Subset Selection for Supervised Video Summarization." *Proceedings of the Neural Information Processing Systems* (**NIPS**), Montreal, Canada, Dec. 2014.

[C6] **B. Gong**, K. Grauman, and F. Sha. "Reshaping Visual Datasets for Domain Adaptation." *Proceedings of the Neural Information Processing Systems* (**NIPS**), Lake Tahoe, NV, Dec. 2013.

[C5] **B. Gong**, K. Grauman, and F. Sha. "Connecting the Dots with Landmarks: Discriminatively Learning Domain-Invariant Features for Unsupervised Domain Adaptation." *Proceedings of the International Conference on Machine Learning* (**ICML**), Atlanta, GA, Jun. 2013. (**Oral**)

[C4] **B. Gong**, Y. Shi, F. Sha, and K. Grauman. "Geodesic Flow Kernel for Unsupervised Domain Adaptation." *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition* (**CVPR**), Providence, RI, Jun. 2012. (**Oral**)

[C3] **B. Gong**, J. Liu, X. Wang, and X. Tang. "3D Object Retrieval with Semantic Attributes." *Proceedings of the 19th ACM international conference on Multimedia* (ACM **MM**), Scottsdale, Arizona, Dec. 2011. (`demo`)

[C2] **B. Gong**, C. Xu, J. Liu, and X. Tang. "Boosting 3D Object Retrieval by Object Flexibility". *Proceedings of the 17th ACM international conference on Multimedia* (ACM **MM**), Beijing, China, Oct. 2009.

[C1] **B. Gong**, Y. Wang, J. Liu, and X. Tang. "Automatic Facial Expression Recognition on a Single 3D Face by Exploring Shape Deformation". *Proceedings of the 17th ACM international conference on Multimedia* (ACM **MM**), Beijing, China, Oct. 2009.

Selected Peer-Reviewed Workshop Publications

[W3] D. Kondratyuk, M. Tan, M. Brown, and **B. Gong**. "When Ensembling Smaller Models is More Efficient than Single Large Models." *The 4th Workshop on Visual Understanding by Learning from Web Data* at CVPR, June 2020.

[W2] A. Mazaheri*, B. Gong, and M. Shah. "Learning a Multi-Concept Video Retrieval Model with Multiple Latent Variables." *The 12th IEEE International Workshop on Multimedia Information Processing and Retrieval*, Dec. 2016.

[W1] **B. Gong**, F. Sha, and K. Grauman. "Overcoming Dataset Bias: An Unsupervised Domain Adaptation Approach." *The First International Workshop on Large Scale Visual Recognition and Retrieval* (BigVision) at NIPS, Lake Tahoe, NV, Dec. 2012. (**Oral**)

Grants

BIGDATA: IA: Distributed Semi-Supervised Training of Deep Models and Its Applications in Video Understanding

Funding agency: **NSF** IIS-1741431 Role: Principal Investigator (PI)

Amount: ($662,431+$42,500 AWS Credits)/3

Duration: 09/2017 – 08/2020 (Transferred to ex-colleagues after leaving UCF)

Significance: The first of its kind ever granted to the University of Central Florida (UCF)

CRII: RI: Multi-Source Domain Generalization Approaches to Visual Attribute Detection

Funding agency: **NSF** IIS-1566511 Role: Sole Principal Investigator (So-PI)

Amount: $175,000

Duration: 05/2016 – 04/2018

Significance: The first of its kind ever granted to the University of Central Florida

Multiple-Modal Summarization of Videos and Photo Albums with User Input
FutureWei Technologies Inc., So-PI, $100,000 (Declined) 07/2017

Face Detector Adaptation without Forgetting
Adobe Research, So-PI, $10,000 05/2017

User-Guided Visual Analytics
Adobe Research, So-PI, $7,000 10/2016

Collaborative Research: Florida-IT-Pathways to Success (Flit-Path)
NSF DUE-1643965, Co-PI 10/2016 – 12/2017

Teaching Experiences

DATA 2040: Deep Learning and Special Topics in Data Science at Brown University
Spring 2021, 40 students, Rating: **4.33/5** (Department median: 3.94)

CAP 4453: Robot Vision at the University of Central Florida
Fall 2016, 64 students, Rating: 3.90/5 (Department median: 3.81)
Fall 2017 (fully online), 30 students, Rating: **4.29/5** (Department median: 3.82)

CAP 6412: Advanced Computer Vision at the University of Central Florida
Spring 2016, 18 students, rating: **4.10/5** (Department median: 3.85)

Students

Ph.D. students:

Yang Zhang	08/2015 – 12/2017; co-supervised with Hassan Foroosh, 2018 – 2020
Aidean Sharghi	08/2015 – 12/2017
Abdullah Jamal	01/2016 – 12/2017; co-supervised with Liqiang Wang, 2018 – 2021
Yifan Ding	01/2016 – 12/2017; co-supervised with Liqiang Wang, 2018 – present
Yandong Li	08/2017 – 12/2017; co-supervised with Liqiang Wang, 2018 – 2021
Samer Iskander (teaching assistant, co-supervise with Dr. Niels Lobo)	01/2016 – 05/2016

Remote Ph.D. student at Tsinghua University, China: Chuang Gan 08/2015 – 01/2018

Master students:

Fareeha Irfan (Google Lime Scholarship and research/teaching assistant)	08/2015 – 08/2017
Suhas Nithyanand (directed research)	08/2016 – 12/2016
Rohan Singh Rajput (independent study)	08/2016 – 12/2016

Ph.D. defense and candidacy committee member for

Hae Beom Lee (Korea Advanced Institute of Science and Technology)	Graduated in 2022
Muhammad Abdullah Jamal (University of Central Florida)	Graduated in 2021
Yandong Li (University of Central Florida)	Graduated in 2021
Yang Zhang (University of Central Florida)	Graduated in 2020
Maryam Jaberi (University of Central Florida)	Graduated in 2018
Dustin Morley (University of Central Florida)	Graduated in 2018

Uzair Tariq (University of Central Florida)	Graduated in 2017
Hong Zhang (University of Central Florida)	Graduated in 2017
Kenneth Thompson (University of Central Florida)	Graduated in 2016

Undergraduate students:

Adam Vest, Univ. of Louisville (NSF Research Experiences for Undergraduates (REU))	2017
Geraldine Versfeld, University of Central Florida (NSF REU)	2017
Truman Thames, Fayetteville State University UNC (NSF REU)	2017
Jacob Scott Laurel, University of Alabama at Birmingham (NSF REU)	2016
Kylie McCarty, University of Central Florida (NSF REU)	2016
Kevin Duarte, University of Central Florida (NSF REU)	2016
Michael Lopez (undergraduate research program)	Spring 2016
Adam Albright, University of Central Florida (senior design)	2016 – 2017
Qiang Li, University of Central Florida (senior design)	2016 – 2017
Kyle Ferguson, University of Central Florida (senior design)	2016 – 2017