

Hexiang (Frank) Hu

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EMPLOYMENT	Research Scientist <i>Google Research, Brain Team</i>	June 2021 Seattle, WA
	Research Assistant <i>University of Southern California</i>	Jan 2017 - May 2021 Los Angeles, CA
	Research Intern <i>Google Research</i>	Feb 2020 - Dec 2020 Mountain view, CA
	Research Intern <i>Intel Research Labs</i>	May 2019 - Dec 2019 Santa Clara, CA
	Research Intern <i>Facebook AI Research</i>	May 2018 - Dec 2018 New York, NY
	Applied Scientist Intern <i>Amazon AWS AI</i>	May 2017 - Aug 2017 Palo Alto, CA
	Research Assistant <i>University of California, Los Angeles</i>	Sept 2016 - Dec 2016 Los Angeles, CA
	Undergraduate Research Assistant <i>Vision and Media Lab at SFU</i>	May 2015 - Dec 2015 Vancouver, BC
	Software Engineer Intern <i>Microsoft</i>	May 2014 - Aug 2014 Vancouver, BC

EDUCATIONS	University of Southern California <i>Ph.D. in Computer Science</i> Advisor: Fei Sha	2017 - 2021
	University of California, Los Angeles (UCLA) <i>Ph.D. in Computer Science (Transfer)</i> Advisor: Fei Sha	2016 - 2017
	Simon Fraser University <i>Bachelor of Science in Computer Science</i> First class with distinction	2013 - 2016
	Zhejiang University <i>Bachelor of Engineering in Computer Science and Technology</i>	2011 - 2013

PUBLICATIONS	Wenhu Chen, Hexiang Hu , Chitwan Saharia, and William W Cohen. “Re-imagined: Retrieval-augmented text-to-image generator”. In: <i>ICLR</i> . 2023
	Wenhu Chen, Hexiang Hu , Xi Chen, Pat Verga, and William W Cohen. “Murag: Multimodal retrieval-augmented generator for open question answering over images and text”. In: <i>EMNLP</i> . 2022
	Hexiang Hu , Ozan Sener, Fei Sha, and Vladlen Koltun. “Drinking from a Firehose: Continual Learning with Web-scale Natural Language”. In: <i>T-PAMI</i> (2023)

*: Authors contributed equally

Tai-Yu Pan, Cheng Zhang, Yandong Li, **Hexiang Hu**, Dong Xuan, Soravit Changpinyo, Boqing Gong, and Wei-Lun Chao. “On model calibration for long-tailed object detection and instance segmentation”. In: *NeurIPS*. 2021

Linlu Qiu, **Hexiang Hu**, Bowen Zhang, Peter Shaw, and Fei Sha. “Systematic Generalization on gSCAN: What is Nearly Solved and What is Next?”. In: *EMNLP*. 2021

Bowen Zhang, **Hexiang Hu**, Linlu Qiu, Peter Shaw, and Fei Sha. “Visually Grounded Concept Composition”. In: *EMNLP*. 2021

Cheng Zhang, Tai-Yu Pan, Yandong Li, **Hexiang Hu**, Dong Xuan, Soravit Changpinyo, Boqing Gong, and Wei-Lun Chao. “MosaicOS: a simple and effective use of object-centric images for long-tailed object detection”. In: *ICCV*. 2021

Jiacheng Chen*, **Hexiang Hu***, Hao Wu, Yuning Jiang, and Changhu Wang. “Learning the Best Pooling Strategy for Visual Semantic Embedding”. In: *CVPR*. 2021

Bowen Zhang*, **Hexiang Hu***, Vihan Jain, Eugene Ie, and Fei Sha. “Learning to Represent Image and Text with Denotation Graph”. In: *EMNLP*. 2020

Wang Zhu*, **Hexiang Hu***, Jiacheng Chen, Zhiwei Deng, Vihan Jain, Eugene Ie, and Fei Sha. “BabyWalk: Going Farther in Vision-and-Language Navigation by Taking Baby Steps”. In: *ACL*. 2020

Han-Jia Ye, **Hexiang Hu**, De-Chuan Zhan, and Fei Sha. “Few-shot learning via embedding adaptation with set-to-set functions”. In: *CVPR*. 2020

Risto Vuorio*, Shao-Hua Sun*, **Hexiang Hu**, and Joseph J Lim. “Multimodal Model-Agnostic Meta-Learning via Task-Aware Modulation”. In: *NeurIPS*. 2019

Hexiang Hu, Ishan Misra, and Laurens van der Maaten. “Evaluating text-to-image matching using binary image selection (BISON)”. in: *ICCV Workshop*. 2019

Bowen Zhang, Hexiang Hu, and Fei Sha. “Visual Storytelling via Predicting Anchor Word Embeddings in the Stories”. In: *ICCV Workshop*. 2019

Nelson Nauata, **Hexiang Hu**, Guang-Tong Zhou, Zhiwei Deng, Zicheng Liao, and Greg Mori. “Structured label inference for visual understanding”. In: *T-PAMI* (2019)

Kurt Shuster, Samuel Humeau, **Hexiang Hu**, Antoine Bordes, and Jason Weston. “Engaging image captioning via personality”. In: *CVPR*. 2019

Hexiang Hu*, Liyu Chen*, Boqing Gong, and Fei Sha. “Synthesized policies for transfer and adaptation across tasks and environments”. In: *NeurIPS*. 2018

Soravit Changpinyo, **Hexiang Hu**, and Fei Sha. “Multi-task learning for sequence tagging: An empirical study”. In: *COLING*. 2018

Bowen Zhang*, **Hexiang Hu***, and Fei Sha. “Cross-modal and hierarchical modeling of video and text”. In: *ECCV*. 2018

Hexiang Hu*, Wei-Lun Chao, and Fei Sha. “Learning answer embeddings for visual question answering”. In: *CVPR*. 2018

Wei-Lun Chao*, **Hexiang Hu***, and Fei Sha. “Cross-dataset adaptation for visual question answering”. In: *CVPR*. 2018

Wei-Lun Chao*, **Hexiang Hu***, and Fei Sha. “Being negative but constructively: Lessons learnt from creating better visual question answering datasets”. In: *NAACL-HLT*. 2018

Chao-Yuan Wu, Manzil Zaheer, **Hexiang Hu**, R Manmatha, Alexander J Smola, and Philipp Krähenbühl. “Compressed video action recognition”. In: *CVPR*. 2018

Hexiang Hu*, **Shiyi Lan***, Yuning Jiang, Zhimin Cao, and Fei Sha. “Fastmask: Segment multi-scale object candidates in one shot”. In: *CVPR*. 2017

Hexiang Hu, Guang-Tong Zhou, Zhiwei Deng, Zicheng Liao, and Greg Mori. “Learning structured inference neural networks with label relations”. In: *CVPR*. 2016

Zhiwei Deng, Arash Vahdat, **Hexiang Hu**, and Greg Mori. “Structure inference machines: Recurrent neural networks for analyzing relations in group activity recognition”. In: *CVPR*. 2016

Chao-Yuan Wu, Manzil Zaheer, **Hexiang Hu**, R Manmatha, Alexander J Smola, and Philipp Krähenbühl. “Compressed video action recognition”. In: *CVPR*. 2018

Hexiang Hu*, **Shiyi Lan***, Yuning Jiang, Zhimin Cao, and Fei Sha. “Fastmask: Segment multi-scale object candidates in one shot”. In: *CVPR*. 2017

Hexiang Hu, Guang-Tong Zhou, Zhiwei Deng, Zicheng Liao, and Greg Mori. “Learning structured inference neural networks with label relations”. In: *CVPR*. 2016

Zhiwei Deng, Arash Vahdat, **Hexiang Hu**, and Greg Mori. “Structure inference machines: Recurrent neural networks for analyzing relations in group activity recognition”. In: *CVPR*. 2016

TECHNICAL REPORTS

Wenhu Chen, Hexiang Hu, Yandong Li, Nataniel Ruiz, Xuhui Jia, Ming-Wei Chang, and William W Cohen. “Subject-driven Text-to-Image Generation via Apprenticeship Learning”. In: *Technical Report*. 2023

Yang Chen, **Hexiang Hu**, Yi Luan, Haitian Sun, Soravit Changpinyo, Alan Ritter, and Ming-Wei Chang. “Can Pre-trained Vision and Language Models Answer Visual Information-Seeking Questions?” In: *arXiv preprint arXiv:2302.11713* (2023)

Hexiang Hu, Yi Luan, Yang Chen, Urvashi Khandelwal, Mandar Joshi, Kenton Lee, Kristina Toutanova, and Ming-Wei Chang. “Open-domain Visual Entity Recognition: Towards Recognizing Millions of Wikipedia Entities”. In: *arXiv preprint arXiv:2302.11154* (2023)

Bowen Zhang*, **Hexiang Hu***, Joonseok Lee*, Ming Zhao, Sheide Chammas, Vihan Jain, Eugene Ie, and Fei Sha. “A Hierarchical Multi-Modal Encoder for Moment Localization in Video Corpus”. In: *arXiv preprint arXiv:2011.09046* (2020)

Hexiang Hu*, Zhiwei Deng*, Guang-Tong Zhou, Fei Sha, and Greg Mori. “Label-bank: Revisiting global perspectives for semantic segmentation”. In: *arXiv preprint arXiv:1703.09891* (2017)

PATENTS

R Manmatha, **Hexiang Hu**, and Deva Ramanan. *Compressed content object and action detection*. US Patent 10,528,819. Jan. 2020

Jain Vihan, JoonSeok Lee, Ming Zhao, Sheide Chammas, **Hexiang Hu**, Bowen Zhang, Sha Fei, and Tze Way Eugene Ie. *Hierarchical video encoders*. US Patent 11,533,495. Dec. 2022

SERVICES

Conference Reviewer

- Conference on Neural Information Processing Systems (NeurIPS)

- International Conference on Machine Learning (ICML)
- International Conference on Learning Representation (ICLR)
- Annual Meeting of the Association for Computational Linguistics (ACL)
- The North American Chapter of the ACL (NAACL)
- IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- International Conference on Computer Vision (ICCV)
- European Conference on Computer Vision (ECCV)
- Asian Conference on Computer Vision (ACCV)
- Winter Conference on Computer Vision (WACV)
- AAI Conference on Artificial Intelligence (AAAI)
- International Conference on Image Processing (ICIP)

Journal Reviewer

- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)

TECHNICAL TALKS

- “Understanding Language in Perception and Embodiment”
- Google, Mountain View, CA Feb 2021
 - Facebook, New York, NY Feb 2021
 - Waymo, Mountain View, CA March 2021
 - University of Washington, Seattle, WA Feb 2021
 - University of California, Berkeley, CA March 2021
 - University of Michigan, Ann Arbor, MI March 2021
 - University of California, Santa Cruz, CA April 2021
- “Learning Visually Grounded Semantics with Denotation Graph”
- Google, Mountain View, CA Sept 2020
 - USC, Los Angeles, CA March 2021
- “Learning Generalizeable Neural Agent across Different Task Horizons”
- Google, Mountain View, CA Nov 2019
- “Synthesized Policies for Transfer and Adaptation across Tasks and Environments”
- NeurIPS, Montreal, QC Dec 2018
- “Being Negative but Constructively: Lessons from Creating Better VQA datasets”
- NAACL, New Orleans, LA Jun 2018
 - USC, Los Angeles, CA April 2021

TEACHING

- Course Assistant*, University of Southern California
- CSCI-599: Deep Learning and its Applications Fall 2017 - 2018
- CSCI-567: Machine Learning Spring 2020 - 2021

AWARDS & HONORS

Awards and Prizes

- NeurIPS Student Travel Award 2018, 2019
- Simon Fraser University President’s Honour Roll 2014, 2015
- Zhejiang University First-class Academic Excellence Award 2011, 2012

Scholarship & Fellowship

- USC CS Department Fellowship 2017
- UCLA CS Department Fellowship 2016

- Simon Fraser University Entrance Scholarship 2013

**PRESS
COVERAGE**

- “BabyWalk AI breaks complex navigation into simple steps”
by Kyle Wiggers, VentureBeat May 12, 2020
- “Facebook aims to be more engaging to humans in latest AI research”
by Tiernan Ray, ZDNet Oct 26, 2018

**ADVISING &
MENTORSHIP**

Junior Ph.D Mentor

- Bowen Zhang, Ph.D student at USC
- Liyu Chen, Ph.D student at USC

Visiting Scholar & Intern Mentor

- Yang Chen, Intern at Google
- Jihyung Kil, Intern at Google
- Wang Zhu, SFU, Next: Ph.D student at USC
- Jiacheng Chen, SFU, Next: Ph.D student at USC
- Han-jia Ye, Nanjing University, Next: Assistant professor at Nanjing University
- Risto Vuorio, SK-Brain, Next: Ph.D student at Cambridge University
- Shiyi Lan, Fudan University, Next: Ph.D student at UMD
- Linlu Qiu, AI Resident at Google, Next: Ph.D student at MIT

Undergraduate Student Mentor

- Yuna Lee, USC, Next: Software Engineer at Google