

Jiuxiang Gu
gu.jiuxiang@gmail.com
jgu004@ntu.edu.sg

September 18, 2019
+65 9449-0580/+1 (408)797-0018
<http://gujiuxiang.com>

RESEARCH INTERESTS

- **Computer Vision:** Image Classification, Object Detection, Image/Video Captioning, Scene Graph Generation, Cross-Modal Retrieval, Visual Dialogue, Visual Question Answering
- **Natural Language Processing:** Multi-lingual and multi-modal NLP (Machine Translation, Image Captioning). Question answering, Summarization, Sentiment analysis
- **Machine Learning:** Neural Networks (Convolutional Neural Networks, Recurrent Neural Networks, Deep Learning, Unsupervised Learning, Reinforcement Learning, Adversarial Learning

EDUCATION

- **Nanyang Technological University** Singapore
Ph.D. Computer Science, Interdisciplinary Graduate School 2016 - 2019
 - Thesis: “Bridging images and natural language with deep learning”
 - Advisors: Prof. Jianfei Cai, Dr. Gang Wang, Assoc Prof. Sinno Jialin Pan, Assoc Prof. Xudong Jiang, Prof. Tsuhan Chen
- **University of Chinese Academy of Sciences** Beijing, China
M.S. Electronic and Communications Engineering 2010 - 2013
- **Jiangsu University** Jiangsu, China
B.Sc. Electronic Information Science and Technology 2006 - 2010

PROFESSIONAL EMPLOYMENTS

- **Adobe Systems Incorporated** San Jose
Research Intern Aug 2018 - Nov 2018
 - Scene Graph Generation with External Knowledge and Image Reconstruction
- **Tokyo Institute of Technology** Tokyo
Exchange Scholar Dec 2017- Dec 2017
 - Participated in **TRECVID** Challenge 2018 – Video to Text (VTT) and ranked the **3-rd** position.
- **Nanyang Technological University, ROSE Lab** Singapore
Research Associate Mar 2015 - Dec 2015
 - Implementing vision capabilities in embedded systems
 - Participated in ImageNet 2015, and ranked the **5-th** position in scene classification task
 - Participated in MS COCO Image Captioning Challenge 2017, and ranked the **6-th** position
- **Chinese Academy of Sciences** Beijing
Research Associate Jun 2013- Mar 2015
 - Founding member of the Hardware design group.

PUBLICATIONS

2019

1. **Jiuxiang Gu**, Shafiq Joty, Jianfei Cai, Handong Zhao, Xu Yang, Gang Wang. [Unpaired Image Captioning via Scene Graph Alignments](#). Proceedings of the IEEE International Conference on Computer Vision (**ICCV, Poster**). Seoul, Korea. Oct 27- Nov 2, 2019.
2. Xiangxi Shi, Jianfei Cai, Shafiq Joty, **Jiuxiang Gu**. Watch It Twice: Video Captioning with a Refocused Video Encoder. Proceedings of the 27th ACM International Conference on Multimedia (**ACM MM, Poster**). Nice, France. Oct 21-25, 2019.
3. **Jiuxiang Gu**, Handong Zhao, Zhe Lin, Sheng Li, Jianfei Cai, Mingyang Ling. [Scene Graph Generation with External Knowledge and Image Reconstruction](#). Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR, Poster**). Long Beach, California, United States. Jun 15-21, 2019.
4. Xiangxi Shi, Jianfei Cai, **Jiuxiang Gu**, Shafiq Joty. [Video Captioning with Boundary-aware Hierarchical Language Decoding and Joint Video Prediction](#). Submitted to the Neurocomputing, 2019.

2018

1. **Jiuxiang Gu**, Shafiq Joty, Jianfei Cai, Gang Wang. [Unpaired Image Captioning by Language Pivoting](#). Proceedings of the 14th European Conference on Computer Vision (**ECCV, Poster**). Munich, Germany. Sep 8-14, 2018.
2. **Jiuxiang Gu**, Jianfei Cai, Shafiq Joty, Li Niu, Gang Wang. [Look, Imagine and Match: Improving Textual-Visual Cross-Modal Retrieval with Generative Models](#). Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (**CVPR, Spotlight**). Salt Lake City, Utah, USA. Jun 18-22, 2018.
3. **Jiuxiang Gu**, Jianfei Cai, Gang Wang, Tsuhan Chen. [Stack-Captioning: Coarse-to-Fine Learning for Image Captioning](#). Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (**AAAI, Oral**). New Orleans, USA. Feb 2-7, 2018.

2017

1. **Jiuxiang Gu**, Gang Wang, Jianfei Cai, Tsuhan Chen. [An Empirical Study of Language CNN for Image Captioning](#). Proceedings of the IEEE International Conference on Computer Vision (**ICCV, Poster**). Venice, Italy. Oct 22-29, 2017.
2. **Jiuxiang Gu**, Zhenhua Wang, Jason Kuen, Lianyang Ma, Amir Shahroudy, Bing Shuai, Ting Liu, Xingxing Wang, Li Wang, Gang Wang, Jianfei Cai, Tsuhan Chen [Recent Advances of Convolutional Neural Networks](#). Pattern Recognition (**PR**), 2017.

PATENTS

1. **CP8695-US (20030.249)**
Generating scene graphs from digital images using external knowledge and image reconstruction

MAJOR HONORS AND AWARDS

AAAI Student Scholarship	2018
NTU Research Scholarship	2016
Outstanding Student Societies of UCAS	2011
Excellent Graduate of UJS, Excellent Student, Outstanding undergraduate graduation thesis	2010
Excellent Student, Second-level scholarship	2009
Excellent Student leader, Second-level scholarship	2008
The 1st prize in China Undergraduate Mathematical Contest in Modeling in Jiangsu Division	2008
The 1st prize in Undergraduate Electronic Design Contest of Jiangsu Province	2008
First-class scholarship, Excellent Student	2007

TEACHING EXPERIENCE

- **CE7491 Advanced Digital Image Processing** Singapore
Teaching Assistant, Nanyang Technological University Sep 11-25, 2017
- **CE4002/CZ4002 Visual Media Compression and Processing** Singapore
Teaching Assistant, Nanyang Technological University Jan - Mar, 2018
- **DM6190 Recent Advance on Image Segmentation and Its Applications** Singapore
Teaching Assistant, Nanyang Technological University Aug - Dec, 2018
- **CZ3005 Artificial Intelligence** Singapore
Teaching Assistant, Nanyang Technological University Jan - May, 2018
- **CZ1012 Engineering Math II** Singapore
Teaching Assistant, Nanyang Technological University Jan - Apr, 2018
- **Deep Learning for NLP** Mooc.ai
Instructor, [Course Link](#) Feb - Apr, 2018

INVITED TALKS

- “*Bridging the Gap between Computer Vision and NLP*”, NTU IGS Seminar, Singapore. Mar. 2019
- “*Scene Graph Generation with External Knowledge and Image Reconstruction*”, Adobe Research, San Jose, CA, USA. Nov. 2018
- “*Bridging the Gap between Computer Vision and NLP*”, Tokyo Institute of Technology, Dec. 2017
- “*Recent Advances of Convolutional Neural Networks*”, NTU ROSE Lab, Sep. 2015

IMPACT AND VISIBILITY

- Multiple-instance learning ([code](#))
- Deep Learning for Natural Language Processing ([CV-NLP_Practice.PyTorch](#), [open course](#))
- CV+NLP ([Stack-Captioning](#), [Video_Captioning.pytorch](#), [Visual_Question_Answering.pytorch](#))

SERVICE

- **Conference Reviewer**
 - Program Committee of the AAAI Conference on Artificial Intelligence 2020
 - Program Committee of the AAAI Conference on Artificial Intelligence 2019
 - Program Committee of the Australasian Australia AI conference 2019
 - IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2018, 2019, 2020)
 - IEEE International Conference on Computer Vision (ICCV 2019)
 - IEEE International Conference on Image Processing (ICIP 2017, 2018, 2019)

- IEEE Winter Conference on Applications of Computer Vision (WACV 2020)
- IEEE International Symposium on Intelligent Signal Processing and Communication Systems (2017)
- Asian Conference on Computer Vision (2018)
- AAAI Conference on Artificial Intelligence (2019)

- **Journal Reviewer**

- IEEE Transactions on Pattern Analysis and Machine Intelligence (2019)
- IEEE Transactions on Circuits and Systems for Video Technology (2017, 2018, 2019)
- IEEE Transactions on Multimedia (2018, 2019)
- IEEE Transactions on Image Processing (2018, 2019)
- IEEE Access (2017, 2018, 2019)
- IEEE Transactions on Cybernetics (2017)
- Signal Processing (2019)
- The Visual Computer (2019)
- Neural Processing Letters (2018, 2019)
- Artificial Intelligence Review (2018)
- Applied Soft Computing (2019)
- Information Processing in Agriculture (2018)
- International Journal of Machine Learning and Cybernetics (2018)
- Knowledge and Information Systems (2018)
- Knowledge-Based Systems (2018)
- Measurement (2018)
- PLOS ONE (2019)
- Scientific Reports (2018)
- European Journal of Remote Sensing (2018)