Sheng Liu

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EDUCATION

State University of New York at Buffalo, Buffalo, NY, USA   Sept. 2018 - June 2022
Ph.D. in Computer Science
Advisor: Prof. Junsong Yuan
Awarded Chair's Fellowship

Xi'an Jiaotong University, Xi'an, Shaanxi, China   Sept. 2011 - June 2017
B.E. in Automation
Member of the Honors Youth Program of Xi'an Jiaotong University

WORK EXPERIENCE

Amazon.com, Seattle, WA, USA   July 2022 - Present
Applied Scientist II, Amazon Prime Video
Designed computer vision system to support virtual product placement. Proposed a novel image composition algorithm that reduces the required annotated data by 50%. We published our work in CVPR'23.

Amazon.com, Seattle, WA, USA   July 2021 - Oct. 2021
Applied Scientist Intern, Amazon Prime Video
Mentor: Xiaohan Nie
Analyzed the unique challenges of 3D scene reconstruction from movies and TV series. Developed and deployed state-of-the-art (SOTA) computer vision method to address the challenges. Our method outperforms existing methods by more than 15.0% across three metrics. We published our work in CVPR'22.

Microsoft Research, Seattle, WA, USA   May 2020 - Aug. 2020
Research Intern, Azure Cognitive Services
Mentor: Xi Yin and Kevin Lin
Introduced the task of open-vocabulary visual instance search (OVIS). Proposed a novel vision-language pre-trained model for OVIS. We published our work in AAAI'22.

Nanyang Technological University, Singapore   Aug. 2017 - July 2018
Project Officer, School of Electrical and Electronic Engineering
Supervisor: Junsong Yuan
Developed vision-and-language models for semantic content understanding. Our video captioning model achieved the best performance on two standard benchmarks in 2018. We published our work in ACM MM'18 and on TPAMI.

PUBLICATIONS

1. **Sheng Liu**, Cong Phuoc Huynh, Cong Chen, Maxim Arap and Raffay Hamid
   LEMaRT: Label Efficient Masked Region Transform for Image Harmonization
   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023

2. **Sheng Liu**, Xiaohan Nie and Raffay Hamid
   Depth-Guided Sparse Structure-from-Motion for Movies and TV Shows
   IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2022

3. **Sheng Liu**, Kevin Lin, Lijuan Wang, Junsong Yuan and Zicheng Liu
OVIS: Open-Vocabulary Visual Instance Search via Visual-Semantic Aligned Pre-Training
AAAI Conference on Artificial Intelligence (AAAI), 2022

4. **Sheng Liu**, Liangchen Song, Yi Xu and Junsong Yuan
NeCH: Neural Clothed Human Model
Visual Communications and Image Processing (VCIP), 2022

5. Liangchen Song*, **Sheng Liu***, Zhong Li, Yuqi Ding, Yi Xu and Junsong Yuan
Learning Kinematic Formulas from Multiple View Videos
ACM Conference on Multimedia (ACM MM), 2022
* indicates equal contribution

6. **Sheng Liu**, Zhou Ren and Junsong Yuan
SibNet: Sibling Convolutional Encoder for Visual Captioning
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2020

7. **Sheng Liu**, Zhou Ren and Junsong Yuan
SibNet: Sibling Convolutional Encoder for Video Captioning
ACM Conference on Multimedia (ACM MM), 2018 (**Oral**)

8. **Sheng Liu** and Junsong Yuan
Rethinking Visual Question Answering as Fill-in-the-Blank Question
Under review

SELECTED HONORS AND AWARDS

Academic

1. **Chair's Fellowship**, State University of New York at Buffalo	2018
2. **Special Prize**, Electronic Design Competition of Shaanxi Province (1/65)	2016
3. **Outstanding Student**, Xi'an Jiaotong University (Top 10%)	2015'16
4. **Siyuan Scholarship**, Xi'an Jiaotong University (Top 15%)	2014'16
5. **Songshan Lake Scholarship**, Xi'an Jiaotong University (Top 8%)	2015

Sports

1. **Third Place**, College Student Volleyball Competition of Shaanxi Province	2015
2. **Second Place**, College Student Volleyball Competition of Shaanxi Province	2014

PROFESSIONAL SERVICES

Conference Reviewer

Conference on Neural Information Processing Systems (NeurIPS'22)
IEEE Conference on Computer Vision and Pattern Recognition (CVPR'19 22)
IEEE International Conference on Computer Vision (AAAI'20 22)
IEEE Winter Conference on Applications of Computer Vision (WACV'19 22)
IEEE International Conference on Computer Vision (ICCV'19'21'23)
International Joint Conferences on Artificial Intelligence (IJCAI'18)

Journal Reviewer

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
IEEE Transactions on Image Processing (TIP)