Wenju Xu

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EDUCATION

Ph.D. in Aerospace Engineering   Aug 2015 - Dec 2019
University of Kansas, Lawrence, KS, USA
Thesis: *Image Cognition for Bio-inspired Navigation and Guidance of Autonomous System*

M.S. in Mechanical Engineering   Aug 2012 – May 2015
Xi'an Jiaotong University, Xi'an, Shaanxi, China

RESEARCH INTEREST

Computer Vision, Deep Learning and Robotics:

⋄ *Object, Scene Recognition and Segmentation*

⋄ *Image Synthesis, Image-to-Image Translation and Style Transfer*

⋄ *Controllable Person Image Synthesis and Human Attribute Editing*

⋄ *Multimodal Fusion, Text-to-Image Generation, and Image/Video Caption*

⋄ *Image and Video Recovery and Enhancement*

⋄ *Camera Pose Estimation and Relocalization*

PROFESSIONAL EXPERIENCE

InnoPeak Technology, Inc. Palo Alto, CA   May 2021 – Present
(OPPO Research Center)
Computer Vision Staff Research Engineer

JD Tech (JD.COM), Mountain View, CA   July 2020 – May 2021
Computer Vision Research Scientist

Mitsubishi Electric Research Lab, Cambridge, MA   Dec 2018 – Aug 2019
Research Intern

Philips Healthcare Research, Cambridge, MA   Jun 2018 – Aug 2018
Research Intern

Philips Lighting Research, Cambridge, MA   *Jun 2017 – Aug 2017*
Research Intern

Hwatech Corporation, Xi'an, China   Jan 2014 – Mar 2014
Research Intern

PUBLICATIONS

International Journals

[1] **Wenju Xu** and Guanghui Wang. "A Domain Gap Aware Generative Adversarial Network for Multi-Domain Image Translation". In: *IEEE Transactions on Image Processing (**T-IP**)* 31 (2021). (Top 1 Journal in Image Processing, IF: 10.86), pp. 72–84.

[2] Jiaqi Yu, Yongwei Nie, Chengjiang Long, **Wenju Xu**, Qing Zhang, and Guiqing Li. "Monte Carlo Denoising via Auxiliary Feature Guided Self-Attention". In: *ACM Transactions on Graphics (**TOG**)* 40.6 (2021). (*Top 1 journal in Computer Graphics, IF: 6.495*).

[3] **Wenju Xu**, Keshmiri Shawn, and Guanghui Wang. "Toward Learning an Unified Many-to-Many Mapping for Diversity". In: *Pattern Recognition (**PR**)* (2019). (IF: 7.19).

[4] **Wenju Xu**, Keshmiri Shawn, and Guanghui Wang. "Adversarially Approximated Autoencoder for Image Generation and Manipulation". In: *IEEE Transactions on Multimedia (**T-MM**)* (2019). (Top 1 Journal in Multimedia, IF: 5.45).

[5] **Wenju Xu**, Keshmiri Shawn, and Guanghui Wang. "Stacked Wasserstein Autoencoder". In: *Neurocomputing* (2019). (IF: 5.71).

[6] **Wenju Xu**, Yuanwei Wu, Wenchi Ma, and Guanghui Wang. "Weakly Supervised Object Localization with Adaptively Denoised Proposal Collection". In: *Neural Processing Letter* (2019).

[7] **Wenju Xu**, Dongkyu Choi, and Guanghui Wang. "Direct Visual-Inertial Odometry with Semi-Dense Mapping, Computers". In: *Computers & Electrical Engineering* (2017).

[8] Xiuyuan Li, Yulong Zhao, Tengjiang Hu, **Wenju Xu**, You Zhao, Yingwei Bai, and Wei Ren. "Design of a large displacement thermal actuator with a cascaded V-beam amplification for MEMS safety-and-arming devices". In: *Microsystem Technologies* 21.11 (2015), pp. 2367–2374.

[9] Guanwu Zhou, Yulong Zhao, Fangfang Guo, and **Wenju Xu**. "A Smart Temperature Compensation System of Silicon Piezoresistive Pressure Sensor with High Accuracy". In: *Sensors* 14 (2014).

International Conferences

[1] **Wenju Xu**, Chengjiang Long, and Guanghui Wang. "Disentangle Representation Learning for Controllable Person Synthetic Image Generation". In: ECCV2022 submitted.

[2] **Wenju Xu**, Chengjiang Long, and Yongwei Nie. "Learning Dynamic Style Kernels for Artistic Style Transfer". In: ECCV2022 submitted.

[3] Hanning Yu, **Wenju Xu**, and Chunxia Xiao. "IDE-GAN: Illumination Decoupling and Estimation for Indoor Object Rendering". In: *Proceedings of the ACM International Conference on Multimedia (**ACM MM**)*. ACM MM2022 submitted.

[4] Zhijun Zhai, Jianhui Zhao, Chengjiang Long, **Wenju Xu**, Shuangjiang He, and huijuan zhao huijuan. "Feature Representation Learning with Displacement Generation and Transformer for Facial Micro-Expression Recognition". In: *Proceedings of the ACM International Conference on Multimedia (**ACM MM**)*. ACM MM2022 submitted.

[5] **Wenju Xu**, Chengjiang Long, Ruisheng Wang, and Guanghui Wang. "DRB-GAN: A Dynamic ResBlock Generative Adversarial Network for Artistic Style Transfer". In: *Proceedings of the IEEE International Conference on Computer Vision (**ICCV**). (Acceptance rate: 3%) (Oral Paper!)*. 2021.

[6] Xinzhi Dong, Chengjiang Long, **Wenju Xu**, and Chunxia Xiao. "Dual Graph Convolutional Networks with Transformer and Curriculum Learning for Image Captioning". In: *Proceedings of the ACM International Conference on Multimedia (**ACM MM**). (Acceptance rate: 27.9%)*. 2021.

[7] **Wenju Xu**, Guanghui Wang, Alan Sullivan, and Ziming Zhang. "Towards Learning Affine-Invariant Representations via Data-Efficient CNNs". In: *2020 IEEE Winter Conference on Applications of Computer Vision (**WACV**)*. 2020.

[8] Rui Huang, **Wenju Xu**, Teng-Yok Lee, Ye Wang, Anoop Cherian, and Tim Marks. "FX-GAN: Self-Supervised GAN Learning via Feature Exchange". In: *2020 IEEE Winter Conference on Applications of Computer Vision (**WACV**)*. 2020.

[9] **Wenju Xu** and Dongkyu Choi. "Direct Visual-Inertial Odometry and Mapping for Unmanned Vehicle". In: *Proceedings of the 12th International Symposium on Visual Computing (**ISVC**)*. 2016.

ArXiv Preprints

[1] Ying Wang, Chiuman Ho, **Wenju Xu**, Ziwei Xuan, Xudong Liu, and Guo-Jun Qi. *Dual-Flattening Transformers through Decomposed Row and Column Queries for Semantic Segmentation.* 2022.

[2] Ziming Zhang, **Wenju Xu**, and Alan Sullivan. *Time-Delay Momentum: A Regularization Perspective on the Convergence and Generalization of Stochastic Momentum for Deep Learning.* 2019.

PATENT

[P1] Hwatech medical info-tech CO LTD.. A Text Extraction Method of X-ray Images. Chinese patent for invention, Publication No.: CN104036292, Filed on 2014-09-10.

AWARDS

★ KU Tuition Grant	2018
★ Irene M Goldsmith Engr Scholarship	2016
★ Aerospace Student Support	2016
★ Lan Aero Eng Scholarship	2016
★ Outstanding Student Award	2009 2010 2011 2012

ACADEMIC ACTIVITIES

Reviewer for the following journals and conferences:
- ◇ IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)
- ◇ AAAI Conference on Artificial Intelligence (AAAI)
- ◇ International Joint Conferences on Artificial Intelligence (IJCAI)
- ◇ IEEE Winter Conference on Applications of Computer Vision (WACV)
- ◇ IEEE Transactions on Neural Networks and Learning Systems (TNNSL)
- ◇ IEEE Transaction on Image Processing (T-IP)
- ◇ Pattern Recognition (PR)
- ◇ Transaction on Multimedia (TMM)
- ◇ Computer Vision and Image Understanding (CVIU)
- ◇ Elsevier Computers & Electrical Engineering

PROJECTS

- Design and implement multi-scale models for image and video enhancement. 2021-2022
- Designed and implemented generative models for digital human synthesising used for product selling, knowledge introduction and news broadcasting. 2020-2021
- Designed and implemented models for object detection and semantic segmentation. 2017-2021
- Designed and implemented a generative model for large-scale image generation. 2018-2020
- Developed a optimization solver for the object recognition in deep neural network learning. 2018
- Designed and implemented a deep camera localization framework. 2017

COURSES

Selected Courses:	Image Processing & Pattern Recognition, Computer Vision, Mathematical Optimization with Applications, Advanced Probability, Graph Theory
Teaching Assistant:	Control Systems

SKILLS

Programming Languages:	Python, Pytorch, Tensorflow, C/C++ and Caffe
Operating Systems:	Linux and ROS