Jianbo **Jiao**

POSTDOCTORAL RESEARCHER

VGG & BioMedIA, University of Oxford

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Experience

VGG and BioMedIA, University of Oxford   *Dec. 2018 - Present*

COMPUTER VISION   *Advised by Prof.* **Alison Noble** *& Prof.* **Andrew Zisserman**

- Work on the SeebiByte Project

Tencent AI Lab   *Fall 2018*

UNSUPERVISED/SELF-SUPERVISED REPRESENTATION LEARNING   *Advised by Dr.* **Linchao Bao**

- Leverage both semantic-level and pixel-level context for unsupervised visual representation learning.
- Design novel tasks for video representation learning.

IFP group, University of Illinois Urbana-Champaign (UIUC)   *2017 - 2018*

SEMANTIC SEGMENTATION, REPRESENTATION LEARNING   *Advised by Prof.* **Thomas S. Huang**

- Improve semantic segmentation by utilizing guidance from other modalities (e.g., depth).
- Investigate unsupervised representation learning from image priors, based on generative models.

City University of Hong Kong   *2015 - 2018*

3D VISION, IMAGE RESTORATION   *Advised by Porf.* **Qingxiong Yang** *& Prof.* **Rynson Lau**

- Depth estimation from stereo and single image, under even noisy conditions.
- Deep learning based image restoration, including denoising, super-resolution, etc.

Digital Media R&D Center, PKU   *2012 - 2015*

STEREO MATCHING, IMAGE-BASED 3D RECONSTRUCTION   *Advised by Prof.* **Ronggang Wang**

- Stereo matching algorithm with filtering-based cost aggregation and secondary disparity refinement.
- Multiview image based 3D reconstruction by structure from motion.

Undergraduate Research, SWJTU   *Fall 2010 - Summer 2012*

CONTENT-BASED IMAGE RETRIEVAL (CBIR)   *Advised by Prof.* **Xiao Wu**

- Develop CBIR system for online shopping. Responsible for research/development of texture- and shape-based retrieval algorithms.
- Outstanding research project of SWJTU

Education

City University of Hong Kong (CityU)   *Fall 2015 - Fall 2018*

PH.D. IN COMPUTER SCIENCE   *GPA: 4.0/4.2*

- Research interests include computer vision, computer graphics, and machine learning.

Peking University (PKU)   *Fall 2012 - Summer 2015*

M.S. IN COMPUTER APPLIED TECHNOLOGY   *GPA: 3.76/4.0*

- Research on 3D vision.
- Be recommended for admission eligibility.

Southwest Jiaotong University (SWJTU)   *Fall 2008 - Summer 2012*

B.ENG. IN COMPUTER SCIENCE AND TECHNOLOGY   *GPA: 3.71/4.0*

- Mao Yi-sheng Honors Class.

Publications

Geometry-Aware Distillation for Indoor Semantic Segmentation

Jianbo Jiao, Yunchao Wei, Zequn Jie, Honghui Shi, Rynson Lau, Thomas S. Huang

*IEEE Computer Society Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019*

Self-supervised Spatio-temporal Representation Learning for Videos by Predicting Motion and Appearance Statistics

Jiangliu Wang, **Jianbo Jiao**, Linchao Bao, Shengfeng He, Yunhui Liu, Wei Liu

*IEEE Computer Society Conference on Computer Vision and Pattern Recognition (**CVPR**), 2019*

Look Deeper into Depth: Monocular Depth Estimation with Semantic Booster and Attention-Driven Loss

Jianbo Jiao, Ying Cao, Yibing Song, Rynson Lau

*European Conference on Computer Vision (**ECCV**), 2018*

Task-driven Webpage Saliency

Quanlong Zheng, **Jianbo Jiao**, Ying Cao, Rynson Lau

*European Conference on Computer Vision (**ECCV**), 2018*

Delving into Salient Object Subitizing and Detection

Shengfeng He, **Jianbo Jiao**, Xiaodan Zhang, Guoqiang Han, Rynson W.H. Lau

*International Conference on Computer Vision (**ICCV**), 2017*

Joint Image Denoising and Disparity Estimation via Stereo Structure PCA and Noise-Tolerant Cost

Jianbo Jiao, Qingxiong Yang, Shengfeng He, Shuhang Gu, Lei Zhang, Rynson W. H. Lau

*International Journal of Computer Vision (**IJCV**), 2017*

FormResNet: Formatted Residual Learning for Image Restoration

Jianbo Jiao, Wei-chi Tu, Shengfeng He, Rynson W. H. Lau

*IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) Workshop (NTIRE),Oral, 2017*

A Hand Pose Tracking Benchmark From Stereo Matching

Jiawei Zhang, **Jianbo Jiao**, Mingliang Chen, Liangqiong Qu, Xiaobin Xu, Qingxiong Yang

*IEEE International Conference on Image Processing (**ICIP**), Oral, 2017*

Color Image Guided Boundaryinconsistent Region Refinement for Stereo Matching

Jianbo Jiao, Ronggang Wang, Wenmin Wang, Dagang Li, Wen Gao

*IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**), 2015*

Local Stereo Matching with Improved Matching Cost and Disparity Refinement

Jianbo Jiao, Ronggang Wang, Wenmin Wang, Shengfu Dong, Zhenyu Wang, Wen Gao

IEEE Multimedia, 2014

Cost-Volume Filtering-Based Stereo Matching with Improved Matching Cost and Secondary Refinement

Jianbo Jiao, Ronggang Wang, Wenmin Wang, Shengfu Dong, Zhenyu Wang, Wen Gao

*IEEE International Conference on Multimedia and Expo (**ICME**), Oral, **Best Student Paper** candidate, 2014*

Depth/Disparity Map Post-processing Method and Device

Jianbo Jiao, Ronggang Wang, Zhenyu Wang, Wenmin Wang, Wen Gao

*US Patent App., **15/565,877**, 2018*

Depth Map and Disparity Map Refinement Method and Equipment

Jianbo Jiao, Ronggang Wang, Zhenyu Wang, Wenmin Wang, Wen Gao

*PCT Patent, **PCT/CN2015/078382[P]**, 2015*

RADAR Disparity Refinement, Stereo Matching and Refinement System

Jianbo Jiao, Ronggang Wang, Zhenyu Wang, Wen Gao, Wenmin Wang, Shengfu Dong

*Chinese Patent, **201310698887.1[P]**, 2013*

Honors & Awards

Jan. 2019	GPU Grant Award	*NVIDIA Corporation*
Apr. 2018	Outstanding Reviewer	*Journal of Visual Communication and Image Representation*
Aug. 2017	Outstanding Academic Performance Award	*CityU*
2017 - 2018	Research Tuition Scholarship	*CityU*
2015 - Present	Hong Kong PhD Fellowship Scheme,**Top scholarship for Hong Kong PhD**	*RGC of Hong Kong*
2015 - 2016	Chow Yei Ching School of Graduate Studies Entrance Scholarships	*CityU*
Jul. 2015	Outstanding Graduate Thesis of Peking University	*PKU*
Jul. 2015	Outstanding Graduate of Beijing	*Beijing Municipal Education Commission*
Jun. 2015	Outstanding Graduate of Peking University	*PKU*
Dec. 2014	National Scholarship (graduate student), **Top 0.4%**	*Ministry of Education of the P.R.C*
Oct. 2014	"Innovation Award" of Peking University, **Top 0.8%**	*PKU*

2014	Outstanding Scholarship	*Cooperative Medianet Innovation Center*
2014	Research Excellence Award, twice	*Digital Media R&D Center, PKU*
Dec. 2013	"Wu Si" Scholarship	*PKU*
Dec. 2013	Social Work Award	*PKU*
Nov. 2011	Medal of "Si Shi Yang Hua", **Highest personal honor of SWJTU**	*SWJTU*
Nov. 2010	National Scholarship (undergraduate student)	*Ministry of Education of the P.R.C*
2008 - 2012	Undergraduate Scholarships (each semester), Merit student	*SWJTU*

Teaching Experience

2015 - 2016	**Certificate of Merit** for good performance in *Teaching Students: First Steps*	*Graduate Studies, CityU*
Jan. 2017 – May 2017	**Teaching Assistant** Computer Graphics (CS4182/CS5182)	*Department of Computer Science, CityU*
Aug. 2016 – Jan. 2017	**Teaching Assistant** Multimedia Technologies and Applications (CS4185)	*Department of Computer Science, CityU*
Jan. 2016 – May 2016	**Teaching Assistant** Computer Vision for Interactivity (CS4187)	*Department of Computer Science, CityU*
Sep. 2015 – Jan. 2016	**Teaching Assistant** Computer Programming (CS2311)	*Department of Computer Science, CityU*
Mar. 2013 – Jun. 2013	**Teaching Assistant** Digital Media Software and System Development (04703920)	*School of Electronic and Computer Engineering, PKU*
Sep. 2012 – Jan. 2013	**Teaching Assistant** Fundamentals of Digital Media Technology (04713901)	*School of Electronic and Computer Engineering, PKU*

Professional Activities

Review services

- IEEE International Conference on Computer Vision (ICCV) 2019
- IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'2019)
- IEEE Transactions on Circuits and Systems for Video Technology
- IEEE Transactions on Cybernetics
- Neurocomputing
- IEEE Multimedia
- IEEE Signal Processing Letters
- Journal of Visual Communication and Image Representation
- Pacific Graphics 2018
- Computer Graphics Forum
- The Visual Computer: International Journal of Computer Graphics

Memberships

- IEEE Membership
- IEEE Young Professionals
- Pattern Analysis and Machine Intelligence, IEEE Computer Society Technical Committee on

Skills

Programming	C/C++, Matlab, Python, etc.
Tools & Framework	Proficient in PyTorch/Torch, MatConvNet and OpenCV. Experienced in QT, OpenMP, OpenGL, and Git.