

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 Prof. **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 - Summer 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

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

Apr. 2018	Outstanding Reviewer	<i>Journal of Visual Communication and Image Representation</i>
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
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 PKU, 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 <i>Teaching Students: First Steps</i>	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

Reviewer

- IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR'2019)
- IEEE Transactions on Circuits and Systems for Video Technology
- Neurocomputing
- 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
- ACM SIGGRAPH Membership

Skills

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

References

Prof. Thomas S. Huang

- Supervisor
- University of Illinois at Urbana-Champaign
- E-mail: huang@ifp.uiuc.edu

Dr. Qingxiong Yang

- Supervisor
- VP of Engineering, JingChi Corp; City University of Hong Kong
- E-mail: liiton.research@gmail.com

Prof. Rynson Lau

- Supervisor
- City University of Hong Kong
- E-mail: rynson.lau@cityu.edu.hk

Prof. Ronggang Wang

- Supervisor
- Peking University
- E-mail: rgwang@pkusz.edu.cn