XIAOWEI HU

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Address: Rm 1024, SHB, The Chinese University of Hong Kong, Shatin, Hong Kong.

EDUCATION

The Chinese University of Hong Kong (CUHK)   08/2016 - Present
Ph.D. in Computer Science and Engineering   Expected graduation date: 07/2020
Advisor: Prof. Pheng-Ann Heng & Prof. Chi-Wing Fu

South China University of Technology (SCUT)   09/2012 - 07/2016
B.Eng. in Computer Science and Technology
GPA: 3.95/4.0 (**rank** 1st in All-English-Teaching Union Class)
⋆ Selected by SCUT for a special class for the most promising students

RESEARCH INTERESTS

Computer vision, image processing, low-level vision, and deep learning.

HONORS AND AWARDS

Hong Kong Ph.D. Fellowship (the **highest** scholarship for students studying in Hong Kong)	2016 - 2020
Excellent Teaching Assistant at CSE Department, CUHK	2018
Top 10 Outstanding Students at SCUT (**rank** 1st, the **highest** award for students at SCUT)	2016
Google Excellence Scholarship (one of 58 winners in **China**)	2015
Tencent Outstanding Scholarship (the **only** undergraduate winner at SCUT)	2015
National Scholarship (the **highest** national wide scholarship for undergraduate students in China)	2013
Gold Award of Pan-Pearl-River-Delta University IT Project Competition in China	2016
First Prize and Best Practical Award of University IT Project Competition in Guangdong Province	2016
First Prize of Adolescents Science & Technology Innovation Contest in Hebei Province	2011

PUBLICATION HIGHLIGHTS

Summary: CCF A (9), TPAMI/CVPR/ICCV/ECCV (6)

Journal Papers

[J1] *Direction-Aware Spatial Context Features for Shadow Detection and Removal*
Xiaowei Hu, Chi-Wing Fu, Lei Zhu, Jing Qin, and Pheng-Ann Heng
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**, IF: 17.730, CCF A), 2019

[J2] *Saliency-Aware Texture Smoothing*
Lei Zhu⋆, **Xiaowei Hu**⋆, Chi-Wing Fu, Jing Qin, and Pheng-Ann Heng (⋆joint 1st authors)
IEEE Transactions on Visualization and Computer Graphics (**TVCG**, IF: 3.780, CCF A), 2019

[J3] *SINet: A Scale-Insensitive Convolutional Neural Network for Fast Vehicle Detection*
Xiaowei Hu, Xuemiao Xu, Yongjie Xiao, Hao Chen, Shengfeng He, Jing Qin, and Pheng-Ann Heng
IEEE Transactions on Intelligent Transportation Systems (**TITS**, IF: 5.744, CCF B), 2019

[J4] *Deep Attentive Features for Prostate Segmentation in 3D Transrectal Ultrasound*
Yi Wang, Haoran Dou, **Xiaowei Hu**, Lei Zhu, Xin Yang, Ming Xu, et al.
IEEE Transactions on Medical Imaging (**TMI**, IF: 7.816, CCF B), 2019

[J5] *Aggregating Attentional Dilated Features for Salient Object Detection*
Lei Zhu, Jiaxing Chen, **Xiaowei Hu**, Chi-Wing Fu, Xuemiao Xu, Jing Qin, and Pheng-Ann Heng
IEEE Transactions on Circuits and Systems for Video Technology (**TCSVT**, IF: 4.046, CCF B), 2019

[J6] *Enhancing Augmented VR Interaction via Egocentric Scene Analysis*
Yang Tian, Chi-Wing Fu, Shengdong Zhao, Ruihui Li, Xiao Tang, **Xiaowei Hu**, and Pheng-Ann Heng
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**Ubicomp**, CCF A), 2019

Conference Papers

[C1] *Mask-ShadowGAN: Learning to Remove Shadows from Unpaired Data*
Xiaowei Hu, Yitong Jiang, Chi-Wing Fu, and Pheng-Ann Heng
IEEE International Conference on Computer Vision (**ICCV**, CCF A), 2019

[C2] *Deep Multi-Model Fusion for Single-Image Dehazing*
Zijun Deng, Lei Zhu, **Xiaowei Hu**, Chi-Wing Fu, Xuemiao Xu, Qing Zhang, Jing Qin, and Pheng-Ann Heng
IEEE International Conference on Computer Vision (**ICCV**, CCF A), 2019

[C3] *Depth-Attentional Features for Single-Image Rain Removal*
Xiaowei Hu, Chi-Wing Fu, Lei Zhu, and Pheng-Ann Heng
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, CCF A), 2019

[C4] *Probabilistic Multilayer Regularization Network for Unsupervised 3D Brain Image Registration*
Lihao Liu, **Xiaowei Hu**, Lei Zhu, and Pheng-Ann Heng
International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2019

[C5] *Direction-Aware Spatial Context Features for Shadow Detection*
Xiaowei Hu, Lei Zhu, Chi-Wing Fu, Jing Qin, and Pheng-Ann Heng
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**, CCF A), 2018 (**Oral**, acceptance rate: **2.1%**)

[C6] *Recurrently Aggregating Deep Features for Salient Object Detection*
Xiaowei Hu, Lei Zhu, Jing Qin, Chi-Wing Fu, and Pheng-Ann Heng
AAAI Conference on Artificial Intelligence (**AAAI**, CCF A), 2018 (**Spotlight**)

[C7] *R^3Net: Recurrent Residual Refinement Network for Saliency Detection*
Zijun Deng*, **Xiaowei Hu***, Lei Zhu, Xuemiao Xu, Jing Qin, Guoqiang Han, and Pheng-Ann Heng (*joint 1st authors)
International Joint Conference on Artificial Intelligence (**IJCAI**, CCF A), 2018 (**Oral**)

[C8] *Bidirectional Feature Pyramid Network with Recurrent Attention Residual Modules for Shadow Detection*
Lei Zhu, Zijun Deng, **Xiaowei Hu**, Chi-Wing Fu, Xuemiao Xu, Jing Qin, and Pheng-Ann Heng
European Conference on Computer Vision (**ECCV**, CCF B), 2018

[C9] *Deep Attentional Features for Prostate Segmentation in Ultrasound*
Yi Wang, Zijun Deng, **Xiaowei Hu**, Lei Zhu, Xin Yang, Xuemiao Xu, Pheng-Ann Heng, and Dong Ni
International Conference on Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2018

Papers Under Review

[U1] *SAC-Net: Spatial Attenuation Context for Salient Object Detection*
Xiaowei Hu, Chi-Wing Fu, Lei Zhu, and Pheng-Ann Heng
IEEE Transactions on Image Processing (**TIP**, IF: 6.790)

[U2] *Single-Image Real-Time Rain Removal Based on Depth-Guided Non-Local Features*
Xiaowei Hu, Lei Zhu, Tianyu Wang, Chi-Wing Fu, and Pheng-Ann Heng
IEEE Transactions on Image Processing (**TIP**, IF: 6.790)

[U3] *Ψ-Net: Stacking Densely Convolutional LSTMs for Sub-cortical Brain Structure Segmentation*
Lihao Liu*, **Xiaowei Hu***, Lei Zhu, Chi-Wing Fu, Jing Qin, and Pheng-Ann Heng (*joint 1st authors)
IEEE Transactions on Medical Imaging (**TMI**, IF: 7.816)

[U4] *CAN: Cross-disease Attention Network for Joint Diabetic Retinopathy and Diabetic Macular Edema Grading from Fundus Images*
Xiaomeng Li, **Xiaowei Hu**, Lequan Yu, Lei Zhu, Chi-Wing Fu, and Pheng-Ann Heng
IEEE Transactions on Medical Imaging (**TMI**, IF: 7.816)

[U5] *R^3Net: Recurrent Residual Refinement Network for Saliency Detection*
Zijun Deng, Lei Zhu, **Xiaowei Hu**, Xuemiao Xu, Jing Qin, Guoqiang Han, and Pheng-Ann Heng
IEEE Transactions on Multimedia (**TMM**, IF: 5.452)

WORK EXPERIENCE

Research Intern, The Chinese University of Hong Kong   06/2015 - 08/2015
Advisor: Prof. Pheng-Ann Heng
Worked on the deep learning techniques for vehicle detection

Research Intern, Hong Kong Baptist University 08/2014
⋆ Selected by the outstanding undergraduate research opportunity program
Advisor: Prof. Yiu-Wing Leung & Doc. Hai Liu
Worked on the fault-tolerant algorithms for cognitive radio networks

Undergraduate Research Assistant, South China University of Technology 01/2013 - 07/2016
Advisor: Prof. Xuemiao Xu
Led a team and worked on the intelligent transportation system (authorized three Chinese invention patents)

PROFESSIONAL ACTIVITIES

Invited Talk

⋄ AI Massive Open Online Course on "Direction-aware Spatial Context Features for Shadow Detection" July 2018

Programme Committee

⋄ The Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI), 2020

Reviewer

⋄ Conferences: CVPR 2019, ICCV 2019, MICCAI 2019
⋄ Journals: IEEE TCSVT, Neurocomputing, The Visual Computer, IEEE Access

Teaching Assistant at CUHK

⋄ Advanced Topics in Computer Graphics and Visualization (Excellent Teaching Assistant) Spring 2018
⋄ Digital Logic and Systems Fall 2016-2018
⋄ Linear Algebra and Vector Calculus for Engineers Spring 2017