

# Xiaoqing GUO

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## EDUCATION

**City University of Hong Kong (CityU)**, Hong Kong Sep. 2018 - Present  
*Ph.D. in Electrical Engineering (EE)*, GPA: 3.925/4

**Supervisor:** Prof. Yixuan Yuan

**Beihang University (BUAA)**, Beijing, China Sep. 2014 - Jun. 2018  
*B.E. in Biomedical Engineering (BME)*, GPA: 3.64/4

**Supervisor:** Prof. Yu Wang (**Honor: Outstanding Undergraduate Thesis Award**)

## PREVIOUS WORK EXPERIENCE

**Tsinghua University**, Beijing, China Sep. 2017 - Jul. 2018  
*Research Assistant in Department of Electrical Engineering (EE)*

**Supervisor:** Prof. Yongfeng Huang

## RESEARCH INTERESTS

Medical Image Analysis, Deep Learning.

My research interests include abnormality recognition and segmentation. Recently, I am dedicated to out-of-distribution generalization, learning with noisy labels, few-shot learning. Previously, I studied topics of making adequate use of unlabeled data and augmenting the limited labeled data for data-efficient deep learning.

## PUBLICATIONS

### Journal Papers

1. **Xiaoqing Guo**, Zhen Chen, Jun Liu, Yixuan Yuan. “Non-Equivalent Images and Pixels: Confidence-Aware Resampling with Meta-Learning Mixup for Polyp Segmentation.” *Medical Image Analysis (MedIA)*, 2022. (**Impact Factor: 8.545**)
2. **Xiaoqing Guo**, Jie Liu, Yixuan Yuan. “Semantic-oriented Labeled-to-unlabeled Distribution Translation for Image Segmentation.” *IEEE Transactions on Medical Imaging (TMI)*, 2021. (**Impact Factor: 10.048**)
3. **Xiaoqing Guo**, Chen Yang, Yixuan Yuan. “Dynamic-Weighting Hierarchical Segmentation Network for Medical Images.” *Medical Image Analysis (MedIA)*, p, 102196, 2021. (**Impact Factor: 8.545**)
4. **Xiaoqing Guo**, Chen Yang, Yajie Liu, Yixuan Yuan. “Learn to Threshold: ThresholdNet with Confidence-Guided Manifold Mixup for Polyp Segmentation.” *IEEE Transactions on Medical Imaging (TMI)*, vol. 40, no. 4, pp. 1134-1146, 2021. (**Impact Factor: 10.048**)
5. **Xiaoqing Guo**, Yixuan Yuan. “Semi-supervised WCE Image Classification with Adaptive Aggregated Attention.” *Medical Image Analysis (MedIA)*, p, 101733, 2020. (**Impact Factor: 8.545**)

6. Jie Liu, **Xiaoqing Guo**, Yixuan Yuan. “Domain Adaptive Instrument Segmentation via Graph Interaction in Prototypical Representation.” *IEEE Transactions on Medical Imaging (TMI)*, 2021. (**Impact Factor: 10.048**)
7. Chen Yang, **Xiaoqing Guo**, Meilu Zhu, Bulat Ibragimov, Yixuan Yuan. “Progressive Mutual-Prototype Alignment with Disentangled Reconstruction for Polyp Segmentation.” *IEEE Journal of Biomedical and Health Informatics (JBHI)*, 2021. (**Impact Factor: 5.772**)
8. Xinyu Liu, **Xiaoqing Guo**, Yajie Liu, Yixuan Yuan. “Consolidated domain adaptive detection and localization framework for cross-device colonoscopic images.” *Medical Image Analysis (MedIA)*, p. 102052, 2021. (**Impact Factor: 8.545**)
9. Zhen Chen, **Xiaoqing Guo**, Peter Y. M. Woo, Yixuan Yuan. “Super-Resolution Enhanced Medical Image Diagnosis with Sample Affinity Interaction.” *IEEE Transactions on Medical Imaging (TMI)*, 2021. (**Impact Factor: 10.048**)
10. Peter YM Woo, Desiree KK Wong, Yixuan Yuan, **Xiaoqing Guo**, Michael KW See, Matthew Tam, Alain KS Wong, Kwong-Yau Chan. “A Morphometric Analysis of Commonly Used Craniometric Approaches for Freehand Ventriculoperitoneal Shunting.” *Operative Neurosurgery*, 2021. (**Impact Factor: 2.703**)
11. Zhongliang Yang, **Xiaoqing Guo**, Ziming Chen, Yongfeng Huang, Yujin Zhang. “RNN-stega: Linguistic steganography based on recurrent neural networks.” *IEEE Transactions on Information Forensics and Security (TIFS)*, 14(5): 1280-1295, 2019. (**Impact Factor: 7.178**)

### Conference Papers

1. **Xiaoqing Guo**, Jie Liu, Tongliang Liu, Yixuan Yuan. “SimT: Handling Open-set Noise for Domain Adaptive Semantic Segmentation.” *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2022)*.
2. **Xiaoqing Guo\***, Chen Yang\*, Baopu Li, Yixuan Yuan. “MetaCorrection: Domain-aware Meta Loss Correction for Unsupervised Domain Adaptation in Semantic Segmentation.” *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2021)*.
3. **Xiaoqing Guo**, Zhen Chen, Yixuan Yuan. “Complementary Network with Adaptive Receptive Fields for Melanoma Segmentation.” *The 17th IEEE International Symposium on Biomedical Imaging (ISBI 2020)*, Iowa City, Iowa, USA.
4. **Xiaoqing Guo**, Chen Yang, Pak Lun Lam, Peter Y.M. Woo, Yixuan Yuan. “Domain Knowledge Based Brain Tumor Segmentation and Overall Survival Prediction.” *Brain Lesion (BrainLes) workshop of MICCAI 2019*, Shenzhen, China.
5. **Xiaoqing Guo**, Yixuan Yuan. “Triple ANet: Adaptive Abnormal-aware Attention Network for WCE Image Classification.” *The 22nd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2019)*, Shenzhen, China. (Early Accept)
6. Jie Liu, **Xiaoqing Guo**, Baopu Li, Yixuan Yuan. “JDS: Joint Domain and Semantic Prediction for Domain Adaptation of Semantic Segmentation.” *IEEE International Conference on Intelligent Robots and Systems (IROS 2021)*, Prague, Czech Republic.
7. Jie Liu, **Xiaoqing Guo**, Yixuan Yuan. “Prototypical Interaction Graph for Unsupervised Domain Adaptation in Surgical Instrument Segmentation.” *The 24th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2021)*, Strasbourg, France.

8. Wuyang Li, Chen Yang, Jie Liu, Xinyu Liu, **Xiaoqing Guo**, Yixuan Yuan. “Comprehensive Polyp Detection and Segmentation with Heterogeneous Endoscopic Data.” *The 3rd International Endoscopy Computer Vision Challenge and Workshop (EndoCV) of ISBI 2021, Nice, France*. (Ranked **1st** place in polyp detection)
9. Zhen Chen, **Xiaoqing Guo**, Chen Yang, Bulat Ibragimov, Yixuan Yuan. “Joint Spatial-Wavelet Dual-Stream Network for Super-Resolution.” *The 23rd International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2020)*, Lima, Peru.
10. Yixuan Yuan, Wenjian Qin, **Xiaoqing Guo**, Mark Buyyounouski, Steve Hancock, Bin Han, Lei Xing. “Prostate Segmentation with Encoder-Decoder Densely Connected Convolutional Network (ED-DenseNet).” *The 16th IEEE International Symposium on Biomedical Imaging (ISBI 2019)*, Venice, Italy.

### Patents

1. **Xiaoqing Guo**, Yixuan Yuan. “Unsupervised Domain Adaptive Model for 3D Prostate Zonal Segmentation.”

### Preprints

1. Siyuan Shan, Wen Yan, **Xiaoqing Guo**, Eric I Chang, Yubo Fan, Yan Xu. “Unsupervised End-to-end Learning for Deformable Medical Image Registration.” *arXiv*, <https://arxiv.org/abs/1711.08608>

### SELECTED AWARDS

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- **MSRA Fellowship Nomination Award** (28 students in Asia), Microsoft 2021
- **Outstanding Academic Performance Award (OAPA)**, City University of Hong Kong 2021
- **Research Tuition Scholarship (RTS)**, City University of Hong Kong 2021 - 2022
- **First in polyp detection**, 3rd International Endoscopy Computer Vision Challenge and Workshop (EndoCV2021) 2021
- **Outstanding Academic Performance Award (OAPA)**, City University of Hong Kong 2020
- **Research Tuition Scholarship (RTS)**, City University of Hong Kong 2020 - 2021
- **Outstanding Academic Performance Award (OAPA)**, City University of Hong Kong 2019
- **Research Tuition Scholarship (RTS)**, City University of Hong Kong 2019 - 2020
- **Honorable Mention**, Mathematical Contest in Modeling (MCM) 2016
- **Grand Prize**, the 25th “Feng Ru Cup” Competition of Innovation, BUAA 2015

### PROFESSIONAL ACTIVITIES

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#### Journal Reviewers

- IEEE Transactions on Medical Imaging (IEEE TMI)
- Pattern Recognition
- Medical Physics

**Conference Reviewers**

- CVPR 2022, MICCAI 2022, ECCV 2022
- ISBI 2021, MICCAI 2021
- MICCAI 2019

**Conference Presentations**

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| • CVPR 2021, Virtual           | Jun. 2021 |
| • MICCAI 2019, Shenzhen, China | Oct. 2019 |
| • ISBI 2019, Venice, Italy     | Apr. 2019 |