

# XIAOMENG LI

Rm1024, Ho Sin-Hang Engineering Building, CUHK, Hong Kong  
(+852) 51087595 ◊ xmli@cse.cuhk.edu.hk

## EDUCATI

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**The Chinese University of Hong Kong**, Hong Kong *2015 - Present*  
PhD., Dept. of Computer science and Engineering, Expected: July 2019  
Supervisor: Dr. Heng Pheng Ann and Dr. Chi-Wing Fu  
**Xi'Dian University**, Xi'an, China (**211, 985 platform**) *2010 - 2014*  
B.Eng., Electrical Engineering.

## RESEARCH INTERESTS

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Medical Image Analysis, Semantic Segmentation, Semi-supervised and Unsupervised Learning, Generative Models, etc.

## AWARDS

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*Champion*, Worldwide Challenge on Liver Tumor Segmentation (**1.0%**), 2017  
*Champion*, Worldwide Challenge on Automatic IVD Localization and Segmentation from 3D Multi-modality MR Images, 2016  
*Graduate Scholarship*, Department of Computer Science and Engineering, Chinese University of Hong Kong, 2015-2019.  
*National Scholarship* in China (**0.6%**), 2014  
*First-class student Scholarship* (5.0%), Xi'Dian University, 2012, 2013  
*Honorable Mention*, Mathematical Contest in Modeling (MCM), 2013  
*National 2nd Prize*, China Undergraduate Mathematical Contest in Modeling(CUMCM) (**3.1%**), 2012.

## PUBLICATIONS

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**Xiaomeng Li**, Lequan Yu, et al. Deeply Supervised Rotation Equivariant Network for Lesion Segmentation in Dermoscopy Images. OR 2.0 Context-Aware Operating Theaters, Computer Assisted Robotic Endoscopy, Clinical Image-Based Procedures, and Skin Image Analysis. Springer, Cham, 2018. 235-243.. (**Oral Presentation**)

**Xiaomeng Li**, Lequan Yu, et al. Semi-supervised Skin Lesion Segmentation via Transformation Equivariant Self-ensembling Model. **The British Machine Vision Conference 2018 (BMVC)**.

**Xiaomeng Li**, Hao Chen, et al. H-DenseUNet: Hybrid Densely Connected UNet for Liver and Tumor Segmentation from CT Volumes. **IEEE Transaction on Medical Imaging**. (**SCI, IF: 6.131**)

**Xiaomeng Li**, Qi Dou, Hao Chen, et al. 3D Multi-scale FCN with Random Modality Voxel Dropout Learning for Intervertebral Disc Localization and Segmentation from Multi-modality MR Images. **Medical Image Analysis**. (**SCI, IF: 5.356**)

**Xiaomeng Li**, Qi Dou, Hao Chen, et al. Multi-scale and Modality Dropout Learning for Intervertebral Disc Localization and Segmentation. International Workshop on Computational Methods and Clinical Applications for Spine Imaging, held in conjunction with MICCAI, 2016. Springer, Cham: 85-91.

Lei Zhu, Weiming Wang, **Xiaomeng Li**, et al. Feature-Preserving Ultrasound Speckle Reduction via  $L_0$  Minimization. **Neurocomputing 2018**. (SCI, IF: 3.241)

Lei Zhu, Weiming Wang, **Xiaomeng Li**, et al. Ultrasound Speckle Reduction via  $L_0$  Minimization. **Asian Conference on Computer Vision (ACCV)**. Springer, Cham, 2016: 50-65.

**Xiaomeng Li**, Lequan Yu, Xu Jia, et al. Revisiting Metric Learning for Few-Shot Classification. *submitted to CVPR 2019*.

**Xiaomeng Li**, Lequan Yu, Hao Chen, et al. Transformation Consistent Self-ensembling Model for Semi-supervised Medical Image Segmentation. *submitted to IEEE Transaction on Neural Network and Learning System*.

## RESEARCH EXPERIENCES

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### Semantic Segmentation

Aug. 2016 - Jan. 2017

*Worldwide Competition on IVD Localization and Segmentation from 3D Multi-modality MR Images (MICCAI 2016)*

- **Won the 1st place in the competition.**
- Proposed multi-scale fully convolutional network for IVD end-to-end localization and segmentation.
- Designed the random modality voxel dropout strategy to tackle the overfitting problem in multi-modality images.
- Code is implemented with Theano and the work is published in Journal of **Medical Image Analysis**.

### Semantic Segmentation

Feb. 2017 - Sep. 2017

*Worldwide Competition on Liver Tumor Segmentation from CT scans (MICCAI 2017)*

- **Won the 1st place in the Competition.** See <https://competitions.codalab.org/competitions/17094#results> team name: **xjqj**
- Proposed HDenseUNet to address the problems in lesion segmentation from 3D CT scans, where 2D convolutions neglect the spatil information along the third dimension and 3D convolutions have heavy computational costs.
- Code is implemented with Tensorflow and the work is published at Journal of **IEEE Transaction on Medical Imaging**

### Semi-supervised Learning

Oct. 2017 - May. 2018

*Semi-supervised Learning for Lesion Segmentation via Self-ensembling Model*

- Achieved the **1st place** with only 300 training lables in skin lesion segmentation benckmark, surpassing other results obtained in the fully-supervised training manner.
- Proposed the transformation equivariant self-ensembling model to segment lesions in the semi-supervised way.
- Code is implemented with Tensorflow and the work is published at **BMVC 2018 conference**.

## TEACHING EXPERIENCES

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| CSCI1540 Fundamental computing with C++                | Fall 2015-2016 |
| ENGG1100 Introduction to Engineering Design            | Spring 2016    |
| CSCI2100 Data structure                                | Fall 2016-2017 |
| CSCI3310 Mobile Computing and Applications Development | Spring 2017    |
| CSCI3310 Mobile Computing and Applications Development | Fall 2017-2018 |