LEQUAN YU

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EDUCATION

The Chinese University of Hong Kong (CUHK), Hong Kong — Aug. 2015 – Present
Ph.D. Candidate, Department of Computer Science & Engineering — Expected graduation: Jul. 2019
Advisor: Prof. Pheng-Ann Heng & Prof. Chi-Wing Fu

Zhejiang University (ZJU), Hangzhou, China — Sep. 2011 – Jun. 2015
B.Eng., Computer Science
Advisor: Prof. Deng Cai
GPA: 91.1/100 (3.92/4.0), **Rank: 1/185**

RESEARCH INTERESTS

My research interests include Deep Learning for Medical Image Analysis and 3D Vision. I am dedicated to bringing deep learning methods to biomedical image analysis. I also have expertise in deep learning for 3D shape analysis.

EXPERIENCE

NVIDIA, Bethesda, Maryland, USA — Jul. 2018 – Oct. 2018
Applied Research Intern
Research Topic: Few-shot medical image segmentation

Siemens Healthineers, Princeton, New Jersey, USA — Mar. 2017 – Jul. 2017
Research Intern
Research Topic: Body landmark detection via deep reinforcement learning

State Key Laboratory of CAD & CG, Zhejiang University, China — Sep. 2013 – Jun. 2015
Undergraduate Research Assistant
Advisor: Prof. Deng Cai

PUBLICATIONS HIGHLIGHTS

citations: 1000+, h-index:13, i10-index:18

Refereed Conference Papers

[C1] EC-Net: an Edge-aware Point set Consolidation Network
Lequan Yu*, Xianzhi Li*, Chi-Wing Fu, Daniel Cohen-Or, Pheng-Ann Heng.
European Conference on Computer Vision (**ECCV**), 2018.

[C2] PU-Net: Point Cloud Upsampling Network
Lequan Yu*, Xianzhi Li*, Chi-Wing Fu, Daniel Cohen-Or, Pheng-Ann Heng.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2018.
✓The first deep learning based technique for point set consolidation

[C3] Semi-supervised Skin Lesion Segmentation via Transformation Consistent Self-ensembling Model
Xiaomeng Li, **Lequan Yu**, Hao Chen, Qi Dou, Chi-Wing Fu, Pheng-Ann Heng.
The British Machine Vision Conference (**BMVC**), 2018.

[C4] Volumetric ConvNets with Mixed Residual Connections for Automated Prostate Segmentation from 3D MR Images
Lequan Yu, Xin Yang, Hao Chen, Jing Qin, Pheng-Ann Heng.
AAAI Conference on Artificial Intelligence (**AAAI**), 2017. [**Oral**] [**Citation:67**]
✓Ranked 1st place in Prostate MR Image Segmentation Challenge 2012 (PROMISE12) until 2018 Jan.

[C5] Automatic 3D Cardiovascular MR Segmentation with Densely-Connected Volumetric ConvNets
Lequan Yu, Jie-Zhi Cheng, Qi Dou, Xin Yang, Hao Chen, Jing Qin, Pheng-Ann Heng.
Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2017.

[C6] Fine-grained Recurrent Neural Networks for Automatic Prostate Segmentation in Ultrasound Images
Xin Yang, **Lequan Yu**, Lingyun Wu, Yi Wang, Dong Ni, Jing Qin, Pheng-Ann Heng.
AAAI Conference on Artificial Intelligence (**AAAI**), 2017. [**Oral**]

[C7] Towards Automatic Semantic Segmentation in Volumetric Ultrasound
Xin Yang, **Lequan Yu**, Shengli Li, Xu Wang, Na Wang, Jing Qin, Dong Ni, Pheng-Ann.
Medical Image Computing and Computer Assisted Intervention (**MICCAI**), 2017. [**Oral**]

[C8] DCAN: Deep Contour-Aware Networks for Accurate Gland Segmentation
Hao Chen, Xiaojuan Qi, **Lequan Yu**, Pheng-Ann Heng.
IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**), 2016. [**Citation:119**]

[C9] 3D Deeply Supervised Network for Automatic Liver Segmentation from CT Volumes
Qi Dou, Hao Chen, Yueming Jin, **Lequan Yu**, Jing Qin, Pheng-Ann Heng.
Medical Image Computing and Computer Assisted Intervention (**MICCAI**),2016.

Refereed Journal Papers

[J1] Towards Automated Semantic Segmentation in Prenatal Volumetric Ultrasound
Xin Yang, **Lequan Yu**, Shengli Li, Jing Qin, Dong Ni, Pheng-Ann Heng et al.
IEEE Transactions on Medical Imaging (**TMI, IF:6.13**), to appear, 2018.

[J2] SV-RCNet: Workflow Recognition from Surgical Videos using Recurrent Convolutional Network
Yueming Jin, Qi Dou, Hao Chen, **Lequan Yu**, Jing Qin, Pheng Ann Heng.
IEEE Transactions on Medical Imaging (**TMI, IF:6.13**), 37(5), pp.1114-1126, 2018.

[J3] Automated Melanoma Recognition in Dermoscopy Images via Very Deep Residual Networks
Lequan Yu, Hao Chen, Qi Dou, Jing Qin, Pheng-Ann Heng.
IEEE Transactions on Medical Imaging (**TMI, IF:6.13**), 36(4), pp.994-1004, 2017. [**Citation:101**]
✓Ranked 1st place in classificaiton task and 2nd place in segmentation task in ISIC 2016 challenge

[J4] Integrating Online and Offline 3D Deep Learning for Automated Polyp Detection in Colonoscopy Videos
Lequan Yu*, Hao Chen*, Qi Dou, Jing Qin, Pheng-Ann Heng.
IEEE Journal of Biomedical and Health Informatics (**J-BHI, IF:3.85**), 21(1), pp.65-75, 2017.

[J5] 3D Deeply Supervised Network for Automated Segmentation of Volumetric Medical Images
Qi Dou, **Lequan Yu**, Hao Chen, Yueming Jin, Xin Yang, Jing Qin, Pheng Ann Heng.
Medical Image Analysis (**MedIA, IF:5.35**), 41, pp.40-54, 2017.
✓**MedIA-MICCAI'17 Best Paper Award**

[J6] VoxResNet: Deep Voxelwise Residual Networks for Volumetric Brain Segmentation
Hao Chen, Qi Dou, **Lequan Yu**, Jing Qin, Pheng Ann Heng.
NeuroImage, IF:5.42, pp.446-455, 2017. [**Citation:119**]

[J7] DCAN: Deep contour-aware networks for object instance segmentation from histology images
Hao Chen, Xiaojuan Qi, **Lequan Yu**, Qi Dou, Jing Qin, Pheng-Ann Heng.
Medical Image Analysis (**MedIA, IF:5.35**),36, pp.135-146, 2017.

[J8] Multi-level Contextual 3D CNNs for False Positive Reduction in Pulmonary Nodule Detection
Qi Dou, Hao Chen, **Lequan Yu**, Jing Qin, Pheng-Ann Heng. IEEE Transactions on Biomedical Engineering (**TBME, IF:4.28**), 64, pp.1558-1567, 2017.

[J9] Automatic Detection of Cerebral Microbleeds from MR Images via 3D Convolutional Neural Networks
Qi Dou, Hao Chen, **Lequan Yu**, Jing Qin, Pheng-Ann Heng et al.
IEEE Transactions on Medical Imaging (**TMI, IF:6.13**), 35(5), pp.1182-1195, 2016. [**Citation:150**]

Book Chapters

[B1] Deep Convolutional Networks for Automated Volumetric Cardiovascular Image Segmentation: From a Design Perspective. Xin Yang., **Lequan Yu**, Qi Dou, Jing Qin, and Pheng-Ann Heng.
Book Name: Cardiovascular Imaging and Image Analysis, 2018.

[B2] Deep Cascaded Networks for Sparsely Distributed Object Detection from Medical Images
Hao Chen, Qi Dou, **Lequan Yu**, Jing Qin, Pheng-Ann Heng et al.
Book Name: Deep Learning for Medical Image Analysis, 2017

AWARDS & HONORS

Teaching Assistant of Merit	2018
MedIA-MICCAI'17 Best Paper Award	2017
MLMI@MICCAI'17 Best Paper Award	2017
AAAI 2017 Scholarship, San Fransisco, USA	2017
Champion, Optic Disc&Cup Segmentation on Retinal Fundus Images (REFUGE 2018)	2018
Champion, Whole-Heart and Great Vessel Segmentation (HVSMR 2016)	2016
Champion, Skin Lesion Analysis Towards Melanoma Detection Challenge (ISIC 2016)	2016
Champion, Prostate MR Image Segmentation 2012 (PROMISE12, when submission)	2016
China National Scholarship (1.8 %)	2012, 2013, 2014
Kwanjeong Educational Foundation Scholarship	2012, 2013, 2014
The Outstanding Undergraduate Award, awarded by China Computer Federation	2014
Meritorious Winner, MCM/ICM contest	2014

PROFESSIONAL ACTIVITIES

Conference Reviews:
30th IEEE Conference on Computer Vision and Pattern Recognition (CVPR'2019)
21th Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI'18)
IEEE International Symposium on Biomedical Imaging (ISBI'18)

Journal Reviews:
Medical Image Analysis
IEEE Transactions on Medical Imaging
IEEE Transactions on Image Processing
IEEE Transactions on Biomedical Engineering
IEEE Journal of Biomedical and Health Informatics
IEEE Access
Neurocomputing
International Journal of Computer Assisted Radiology and Surgery
International Journal of Medical Informatics
Computer Methods and Programs in Biomedicine
SPIE Journal of Electronic Imaging
Journal of Healthcare Engineering
Informatics in Medicine Unlocked
Signal Processing

SKILLS

Languages	Python, MATLAB, C/C++
Toolkits	TensorFlow, PyTorch, Caffe, Linux Shell, VTK, ITK, LaTeX

TEACHING

CSCI3150 Introduction to Operating Systems	Spring 2017, Fall 2017, Spring 2018
ENGG5108 Big Data Analytics	Fall 2016
CSCI3180 Principles of Programming Languages	Spring 2016
CSCI1130 Introduction to Computing Using Java	Fall 2015