

Liang Chen

CONTACT INFORMATION	344 Huxley Building, Imperial College London 180 Queen's Gate, London, SW7 2AZ, UK	+44-(0)75 9898 5198 liang.chen12@imperial.ac.uk
RESEARCH INTERESTS	Medical Image Analysis, Computer Vision, Machine Learning	
EDUCATION	Imperial College London , London, UK	
	Ph.D., Computing Research, 2015.10 – 2018.12	
	<ul style="list-style-type: none">• Thesis: <i>Machine Learning in Medical Image Analysis</i>• Supervisors: Prof. Daniel Rueckert, Dr. Paul Bentley	
	M.Sc., Advanced Computing, 2012.09 – 2013.09	
	<ul style="list-style-type: none">• Topic: <i>Machine Learning, Computer Vision, Optimization</i>• Rank: <i>Distinction</i>• Supervisor: Prof. Daniel Rueckert	
	Nanjing University of Information Science & Technology , Nanjing, China	
	B.Sc., Information & Computing Science, 2008.09 – 2012.06	
	<ul style="list-style-type: none">• Major: <i>Computational Mathematics</i>• GPA: <i>90/100</i>	
EXPERIENCE	Research Assistant BioMedIA Group, Department of Computing, Division of Brain Sciences, Department of Medicine, Imperial College London	2014.01 to present
	<ul style="list-style-type: none">• Supervisors: <i>Prof. Daniel Rueckert</i>, <i>Dr. Paul Bentley</i>• Project: <i>Decision-assist software for management of acute ischaemic stroke using brain-imaging machine-learning (Ref: II-LA-0814-20007, NIHR)</i>• Achievements:<ul style="list-style-type: none">• Developed a stroke imaging dataset (~10,000 subjects), collaborating with clinicians, radiologists, medical students, etc.• Developed automated pipelines for image processing (scan joining, intra and inter subject registration, intensity normalization, etc.)• Developed novel algorithms for identification of stroke disease biomarkers (small vessel disease, acute ischemic infarct, atrophy, etc.) based on machine learning algorithms (random forests, multi-instance learning, deep neural networks, etc.)• Deployed the pipelines and algorithms to local hospitals with a software engineer	
	Teaching Assistant Department of Computing, Imperial College London	Springs 2016, 2017
	<ul style="list-style-type: none">• CO317 - Graphics	
SKILLS	Operation Systems: <ul style="list-style-type: none">• Linux, Windows, macOS	
	Programming Languages: <ul style="list-style-type: none">• Python, Matlab, C/C++	
	Deep Learning Frameworks: <ul style="list-style-type: none">• Tensorflow, Caffe	
	Languages: <ul style="list-style-type: none">• Mandarin, English	

AWARDS	Silver Medal	2017.11
	<ul style="list-style-type: none"> • Huawei UK Student Challenge 	
	Deep learning based image deblurring	
	First Class Scholarship	2011, 2012
	<ul style="list-style-type: none"> • Nanjing University of Information Science & Technology 	
	Honourable Mention	2011.02
	<ul style="list-style-type: none"> • International Mathematical Contest in Modelling (MCM) 	
	Second Prize	2010.09
	<ul style="list-style-type: none"> • China Undergraduate Mathematical Contest in Modelling (CUMCM) 	
SERVICE	Reviewer	
	<ul style="list-style-type: none"> • IEEE Transactions on Medical Imaging 	
PUBLICATIONS	Published Journal Papers	
	<ol style="list-style-type: none"> 1. Chen, L., Bentley, P., Mori, K., Misawa, K., Fujiwara, M., and Rueckert, D., “DRINet for medical image segmentation.” <i>IEEE Transactions on Medical Imaging</i>, 2018. 2. Chen, L., Jones, A., Mair, G., Patel, R., Gontsarova, A., Ganesalingam, J., Math, N., Dawson, A.C., Basaam, A., Cohen, D., Mehta, A., Wardlaw, J., Rueckert, D., and Bentley, P., “Rapid automated quantification of cerebral leukoaraiosis on CT.” <i>Radiology</i>, 288(2):573–581, 2018. 3. Qin, C., Guerrero, R., Bowles, C., Chen, L., Dickie, D.A., Valdés-Hernández, M.C., Wardlaw, J., and Rueckert, D., “A large margin algorithm for automated segmentation of white matter hyperintensity.” <i>Pattern Recognition</i>, 77:150–159, 2018. 4. Guerrero, R., Qin, C., Oktay, O., Bowles, C., Chen, L., Joules, R., Wolz, R., Valdés-Hernández, M.C., Dickie, D.A., Wardlaw, J., and Rueckert, D., “White matter hyperintensity and stroke lesion segmentation and differentiation using convolutional neural networks.” <i>NeuroImage: Clinical</i>, 17:918–934, 2018. 5. Chen, L., Bentley, P., and Rueckert, D., “Fully automatic acute ischemic lesion segmentation in DWI using convolutional neural networks.” <i>NeuroImage: Clinical</i>, 15:633–643, 2017. 6. Maier, O., Menze, B.H., von der Gablentz, J., Häni, L., Heinrich, M.P., Liebrand, M., Winzeck, S., Basit, A., Bentley, P., Chen, L., and others, “ISLES 2015-A public evaluation benchmark for ischemic stroke lesion segmentation from multispectral MRI.” <i>Medical Image Analysis</i>, 35:250–269, 2017. 7. Tong, T., Gray, K., Gao, Q., Chen, L., Rueckert, D., and The Alzheimer’s Disease Neuroimaging Initiative, “Multi-modal classification of Alzheimer’s disease using nonlinear graph fusion.” <i>Pattern recognition</i>, 63:171–181, 2017. 8. Tong, T., Gao, Q., Guerrero, R., Ledig, C., Chen, L., Rueckert, D., and The Alzheimer’s Disease Neuroimaging Initiative, “A novel grading biomarker for the prediction of conversion from mild cognitive impairment to Alzheimer’s disease.” <i>IEEE Transactions on Biomedical Engineering</i>, 64(1):155–165, 2017. 	

Conference Papers

1. Schlemper, J., Oktay, O., **Chen, L.**, Matthew, J., Knight, C., Kainz, B., Glocker, B., and Rueckert, D., “Attention-gated networks for improving ultrasound scan plane detection.” *International conference on Medical Imaging with Deep Learning*, 2018.
2. **Chen, L.**, Tong, T., Ho, C.P., Patel, R., Cohen, D., Dawson, A.C., Halse, O., Geraghty, O., Rinne, P.E., White, C.J., and others, “Identification of cerebral small vessel disease using multiple instance learning.” *International Conference of Medical Image Computing and Computer-Assisted Intervention (MICCAI)*, 523–530, 2015.

Workshop Papers

1. **Chen, L.**, Bentley, P., and Rueckert, D., “A novel framework for sub-acute stroke lesion segmentation based on random forest.” *Ischemic Stroke Lesion Segmentation*, 2015.
2. Kamnitsas, K., **Chen, L.**, Ledig, C., Rueckert, D., and Glocker, B., “Multi-scale 3D convolutional neural networks for lesion segmentation in brain MRI.” *Ischemic Stroke Lesion Segmentation*, 2015.
3. Tong, T., Gray, K., Gao, Q., **Chen, L.**, and Rueckert, D., “Nonlinear graph fusion for multi-modal classification of Alzheimers disease.” *International Workshop on Machine Learning in Medical Imaging*, 77–84, 2015.

Paper Under Review

1. **Chen, L.**, Bentley, P., Mori, K., Misawa, K., Fujiwara, M., and Rueckert, D., “Self-supervised feature learning for medical image analysis.”

REFERENCES

Prof. Daniel Rueckert, PhD, FREng, FIEEE, FMICCAI

Head of Department of Computing
Imperial College London

Phone: +44-(0)20 7594 8333

E-mail: d.rueckert@imperial.ac.uk

Dr. Paul Bentley, MA, MRCP, PhD

Clinical Senior Lecturer in Clinical Neuroscience

Phone: +44-(0)20 8846 7284

Honorary Consultant Neurologist

E-mail: p.bentley@imperial.ac.uk

Division of Brain Sciences, Department of Medicine

Imperial College London