

## Liang Chen

CONTACT INFORMATION	344 Huxley Building, Imperial College London 180 Queen's Gate, London, SW7 2AZ, UK	+44-(0)75 9898 5198 <a href="mailto:liang.chen12@imperial.ac.uk">liang.chen12@imperial.ac.uk</a>
RESEARCH INTERESTS	Medical Image Analysis, Computer Vision, Machine Learning	
EDUCATION	<b>Imperial College London</b> , London, UK	
	Ph.D., Computing Research, 2015.10 – 2018.09 ( <i>Expected</i> )	
	<ul style="list-style-type: none"> <li>• Thesis: <i>Machine Learning in Medical Image Analysis</i></li> <li>• Supervisors: Prof. Daniel Rueckert, Dr. Paul Bentley</li> </ul>	
	M.Sc., Advanced Computing, 2012.09 – 2013.09	
	<ul style="list-style-type: none"> <li>• Topic: <i>Machine Learning, Computer Vision, Optimization</i></li> <li>• Rank: <i>Distinction</i></li> <li>• Supervisor: Prof. Daniel Rueckert</li> </ul>	
	<b>Nanjing University of Information Science &amp; Technology</b> , Nanjing, China	
	B.Sc., Information & Computing Science, 2008.09 – 2012.06	
	<ul style="list-style-type: none"> <li>• Major: <i>Computational Mathematics</i></li> <li>• GPA: <i>90/100</i></li> </ul>	
EXPERIENCE	<b>Research Assistant</b>	2014.01 to present
	BioMedIA Group, Department of Computing, Division of Brain Sciences, Department of Medicine, Imperial College London	
	<ul style="list-style-type: none"> <li>• Supervisors: Prof. Daniel Rueckert, Dr. Paul Bentley</li> <li>• Project: <i>Decision-assist software for management of acute ischaemic stroke using brain-imaging machine-learning (Ref: II-LA-0814-20007, NIHR)</i></li> <li>• Achievements:               <ul style="list-style-type: none"> <li>• Developed a stroke imaging dataset (~10,000 subjects), collaborating with clinicians, radiologists, medical students, etc.</li> <li>• Developed automated pipelines for image processing (scan joining, intra and inter subject registration, intensity normalization, etc.)</li> <li>• 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.)</li> <li>• Deployed the pipelines and algorithms to local hospitals with a software engineer</li> </ul> </li> </ul>	
	<b>Teaching Assistant</b>	Springs 2016, 2017
	Department of Computing, Imperial College London	
	<ul style="list-style-type: none"> <li>• CO317 - Graphics</li> </ul>	
SKILLS	Operation Systems:	
	<ul style="list-style-type: none"> <li>• Linux, Windows, macOS</li> </ul>	
	Programming Languages:	
	<ul style="list-style-type: none"> <li>• Python, Matlab, C/C++</li> </ul>	
	Deep Learning Frameworks:	
	<ul style="list-style-type: none"> <li>• Tensorflow, Caffe</li> </ul>	
	Languages:	
	<ul style="list-style-type: none"> <li>• Mandarin, English</li> </ul>	

AWARDS	Silver Medal	2017.11
	<ul style="list-style-type: none"> <li>• Huawei UK Student Challenge</li> </ul>	
	Deep learning based image deblurring	
	First Class Scholarship	2011, 2012
	<ul style="list-style-type: none"> <li>• Nanjing University of Information Science &amp; Technology</li> </ul>	
	Honourable Mention	2011.02
	<ul style="list-style-type: none"> <li>• International Mathematical Contest in Modelling (MCM)</li> </ul>	
	Second Prize	2010.09
	<ul style="list-style-type: none"> <li>• China Undergraduate Mathematical Contest in Modelling (CUMCM)</li> </ul>	
SERVICE	Reviewer	
	<ul style="list-style-type: none"> <li>• IEEE Transactions on Medical Imaging</li> </ul>	
PUBLICATIONS	<b>Published Journal Papers</b>	
	<ol style="list-style-type: none"> <li>1. <b>Chen, L.</b>, Bentley, B., Mori, K., Misawa, K., Fujiwara, M., and Rueckert, D. "DRINet for medical image segmentation." <i>IEEE Transactions on Medical Imaging</i>, 2018.</li> <li>2. <b>Chen, L.</b>, 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>, 2018.</li> <li>3. Qin, C., Guerrero, R., Bowles, C., <b>Chen, L.</b>, 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.</li> <li>4. Guerrero, R., Qin, C., Oktay, O., Bowles, C., <b>Chen, L.</b>, 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.</li> <li>5. <b>Chen, L.</b>, 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.</li> <li>6. Maier, O., Menze, B.H., von der Gablentz, J., Häni, L., Heinrich, M.P., Liebrand, M., Winzeck, S., Basit, A., Bentley, P., <b>Chen, L.</b>, 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.</li> <li>7. Tong, T., Gray, K., Gao, Q., <b>Chen, L.</b>, 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.</li> <li>8. Tong, T., Gao, Q., Guerrero, R., Ledig, C., <b>Chen, L.</b>, 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.</li> </ol>	

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.

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.

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

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  
Honorary Consultant Neurologist  
Division of Brain Sciences, Department of Medicine  
Imperial College London  
Phone: +44-(0)20 8846 7284  
E-mail: p.bentley@imperial.ac.uk