

WEI LIU

RESEARCH INTERESTS	Machine learning , data mining, imaging and computer vision . I'm especially interested in applying statistical learning algorithm to multivariate data in imaging and vision.	
EDUCATION	Ph.D. in Computing	2008 – 2014
	School of Computing, University of Utah	
	<ul style="list-style-type: none">Resting-State Functional Magnetic Resonance Imaging Analysis By Graphical Model (Advisor: Tom Fletcher)	
	M.S. in Electronic Engineering	2001 – 2004
	Jilin University, Changchun, Jilin, China	
	<ul style="list-style-type: none">Feature Extraction Using Subspace Decomposing and Kernel Space Mapping (Advisor: HexinChen)	
	B.S. in Electronic Engineering	1997 – 2001
	Jilin University, Changchun, Jilin, China	
EMPLOYMENT	Postdoctoral	2014 –
	Utah Center for Advanced Imaging Research, University of Utah	
	<ul style="list-style-type: none">Working with Dr. Brian Chapman on statistical shape analysis with human lung CT imaging.	
	Research Assistant	2008 – 2014
	Scientific Computing and Imaging Institute, University of Utah	
	<ul style="list-style-type: none">Worked with Dr. Tom Fletcher on human brain functional network analysis with functional MRI image. Used statistical learning techniques such as graphical model, Bayesian and Monte Carlo methods to explore the functional system of a group of subjects.Joint learning of hidden structures from functional MRI data and the gene expression data.Semi-supervised learning of lesion from multi-modality, longitudinal images of patients with traumatic brain injury.	
	Member of Technical Staff	2004 – 2008
	Lucent Technologies, Nanjing	
	<ul style="list-style-type: none">Software engineer on Lucent mobile switching center; Reviewed customer requirement, participated in system design, developed code in Lucent code management system; Run experiments in Lucent realtime Unix environment and Lucent lab at Lisle, Illinois.Finished 10 projects. Customers include Verizon Wireless, Sprint PCS, Metro PCS, India Reliance, China Unicom and Telecom New Zealand.	
PUBLICATIONS	<ul style="list-style-type: none">Wei Liu, Suyash P. Awate, Jeffrey S. Anderson, P. Thomas Fletcher, A Functional Network Estimation Method of Resting-State fMRI Using a Hierarchical Markov Random Field, <i>NeuroImage</i>, In press.Wei Liu, Suyash P. Awate, P. T. Fletcher, Group Analysis of Resting-State fMRI by Hierarchical Markov Random Fields, <i>Medical Image Computing and Computer-Assisted Intervention (MICCAI) 2012</i>, pp. 189–196.Wei Liu, Suyash P. Awate, P. T. Fletcher, Monte Carlo expectation maximization with hidden Markov models to detect functional networks in resting-state fMRI, <i>Machine Learning in Medical Imaging, Lecture Notes in Computer Science (LNCS)</i>, Vol. 7009/2011,	

pp. 59–66, 2011.

- **Wei Liu**, Peihong Zhu, Jeffrey S. Anderson, Deborah Yurgelun-Todd, P. Thomas Fletcher, Spatial Regularization of Functional Connectivity Using High-Dimensional Markov Random Fields, *Medical Image Computing and Computer-Assisted Intervention (MICCAI) 2010*, pages 363-370, 2010
- Bo Wang, **Wei Liu**, Marcel Prastawa, Andrei Irimia, Paul M. Vespa, John D. van Horn, P. Thomas Fletcher, Guido Gerig, 4D Active Cut: An Interactive Tool for Pathological Anatomy Modeling, *IEEE International Symposium on Biomedical Imaging (2014)*, In Press.
- **Wei Liu**, Hexin Chen, Mianshu Chen, Kernel based Optimal Iterative Discriminant Analysis, *International Conference on Computational Intelligence, Robotics and Autonomous Systems*, Singapore, December, 2003.
- CHEN Mianshu, Chen He-Xin, **LIU Wei**, A New Method for Resolving the Uncorrelated Set of Discriminant Vectors, *Chinese Journal of Computers*, July 2004.

HONORS	Human Brain Mapping Hackathon	2013
	<ul style="list-style-type: none"> • Won the second challenges of the 2013 HBM Hackathon sponsored by Allen Institute for Brain Science and Amazon Web Services: <i>Best neural systems model or visualization based on large scale integration of resting state fMRI data with other HBM Hackathon accessible datasets.</i> • explored high-dimensional (sixty thousand probes) gene expression data sampled from neo-cortex and looked for the relationship between the gene expression and resting-state fMRI data. Mapped gene expression on brain cortex for visualization (Joint work with Kris Zygmunt and Sean McKenna). 	
	SCIX Best Poster Award	2011
	<ul style="list-style-type: none"> • Winner of the SCIX 2011 best poster awards: Structural and Functional Connectivity of Human Brain (Joint worked with Xiang Hao). 	
PROFESSIONAL SERVICE	University of Utah	2008 – present
	<ul style="list-style-type: none"> • Peer reviewing for MICCAI (2012, 2013, 2014), PLOS ONE, ICCS 2014. • Taught a special session of Markov random field on the 2012 graduate class <i>Advanced Image Processing</i>. • Taught a special session on the 2013 undergraduate class <i>Probability and Statistics for Engineers</i>. 	
	Lucent Technologies	2004 – 2008
	<ul style="list-style-type: none"> • As interviewer, designed interview questions and had 20 interview sessions in 2007 recruiting event. • Trained new employees on Lucent development and testing environment. 	
TECHNICAL SKILLS	<p>Programming language: C/C++, Matlab, Python, R, shell scripting</p> <p>Parallel computing: Pthreads, OpenMP, GPU (CUDA)</p> <p>Imaging development platform: ITK, openCV</p> <p>Libraries/packages: Lemon graph library, boost C++ library, Python Scikit-Learn, eigen</p> <p>Imaging software: FSL, SPM, 3D Slicer, AFNI, ITK-SNAP</p> <p>General software/platform: Linux, Latex, Inkscape, Adobe Indesign</p>	