

TIAN CAO

CONTACT INFORMATION

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RESEARCH INTERESTS

Image Analysis, Computer Vision, Machine Learning

EDUCATION

UNIVERSITY of NORTH CAROLINA at CHAPEL HILL, Chapel Hill, NC, USA	since 08/2010
Ph.D. candidate in Computer Science	
SICHUAN UNIVERSITY, Chengdu, Sichuan, China	09/2007-05/2010
Master of Science in Computer Science	
SICHUAN UNIVERSITY, Chengdu, Sichuan, China	09/2003-05/2007
Bachelor of Engineering in Computer Science	

RESEARCH EXPERIENCE

Registration for Correlative Microscopy using Image Analogies	2011-2012
<i>Research Assistant</i> at UNC Chapel Hill	Advisor: Marc Niethammer
Developed an image analogies based multi-modal registration algorithm, extended the traditional image analogies method with sparse representation model, and applied this algorithm to the registration of Correlative Microscopy images.	
Energy based Crowd Motion Analysis	2009-2010
<i>Research Assistant</i> at SIAT/CUHK	Advisor: Yangsheng Xu
Developed a energy based crowd motion analysis algorithm based on mutual information, and applied this algorithm to detect the crowd abnormal behaviors.	
Super Resolution and Anisotropic Diffusion for Ultrasound Speckle Reduction	2009
<i>Research Assistant</i> at SCU/SASET	Advisor: Dong C. Liu
Developed a fast and robust super-resolution method for intima reconstruction in medical ultrasound imaging, and applied anisotropic diffusion to reduce speckle with edge enhancement during the image reconstruction.	

PUBLICATIONS

- [1]. **Tian Cao**, Christopher Zach, Marc Niethammer et al., "Registration for Correlative Microscopy using Image Analogies", *Fifth Workshop on Biomedical Image Registration* (accepted).
- [2]. **Tian Cao**, Bo Wang, Dong C. Liu, "Optimized GPU Framework of Semi-implicit AOS Scheme Based Speckle Reducing Nonlinear Diffusion", *proceedings of SPIE Medical Imaging, 2009, Vol. 7259, 2009*.
- [3]. Bo Wang, **Tian Cao**, Yuguo Dai, Dong C. Liu, "Ultrasound Speckle Reduction via Super Resolution and Nonlinear Diffusion", *the 9th Asian Conference on Computer Vision (ACCV 2009), 2009*.
- [4]. **Tian Cao**, Chaowei Tan, Dong C. Liu, "Adaptive Curve Region based Motion Estimation and Motion Visualization of Cardiac Ultrasound Imaging", *the 3rd International Conference on Bioinformatics and Biomedical Engineering (ICBBE 2009), Vol. 3, pp. 453-457, 2009*.
- [5]. **Tian Cao**, Xinyu Wu, Jinnian Guo, Shiqi Yu, Yangsheng Xu, "Abnormal Crowd Motion Analysis", *IEEE International Conference on Robotics and Biomimetics (ROBIO 2009), 2009*.

HONORS & AWARDS	Guanghua Scholarship.	2010
	Graduate Student Fellowship 2009 (top 5%), Sichuan University.	2009
	Excellent undergraduate Student (top 5%), Sichuan University.	2007
	Student Innovation Award (1st prize), Sichuan University.	2006
	1st prize of China Undergraduate Mathematical Contest in Modeling (CUMCM).	2006
PROFESSIONAL SKILLS	C/C++, Java, Python, Matlab	