

Xiaolong (Jeff) Zhang

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EDUCATION

Master in Computer Science, 2010, GPA: 3.74

Ira. A. Fulton School of Engineering, Arizona State University, Tempe, Arizona, Advisor: Baoxin Li

B.Sc in Applied Mathematics, 2006, GPA: 3.7

Beijing University of Posts and Telecom. Beijing, China

SKILLS

Programming: C/C++/C#/Perl/JAVA/MATLAB/PHP/Ruby/OpenGL/OpenCV/MPI/CUDA

Expertise: Data Mining/Information Retrieval/Visual Computing/High Performance Computing

Development environment: Linux/Windows/Mac

Excellent Communication/Teamwork/Leadership skill

PROFESSIONAL ACTIVITIES

Software Engineer in Development, **Microsoft Corporation**, Redmond, WA. (Dec 2010 – present)

Work in the AdIndex team, part of AdCenter in the Online Service Division that provide infrastructure to support and improve the relevance of Advertisement content for Bing. Work involves crawler optimization, feature extraction and large volume data processing in distributed DB.

Software Engineer in Development Intern, **Microsoft Corporation**, Redmond, WA. May-Aug 2010, Worked in the online service division, designed and implemented a feature in the AdIndex pipeline.

Summer Research Fellow, **Idaho National Laboratory**, Idaho Falls, ID 2009, Mentor: Dr. Steve D. Howe
Scientific research and simulation on orbital mechanics, nuclear thermal rocket characteristics. Estimation of critical mission parameters for interception a long-period comet using Nuclear Thermal propulsion is performed. Secondary project on alternative design of the NASA FSP using Monte Carlo.

Intern, **SIEMENS Ltd.**, Beijing, China. Dec 05 – May 06

Mobile phone telecommunication standards.

Intern, **China UNICOM.**, Xi'an, China. May-Aug 2004

GSM 900/1800 network inspection and monitoring.

RESEARCH ACTIVITIES

Graduate Researcher, **Arizona State University**, Tempe, Arizona, 2006 – 2010.

Brain Conformal mapping. Perform conformal mapping experiment with fMRI brain images acquired from the BioDesign institute. Detailed tasks include scripting to run the pipeline, debugging existing system as well as volumetric data visualization and inspection. In the learning side, investigating Boosting and Feature selection techniques to improve the patient classification result. (with Yalin Wang)

Adaptive Tactile map for haptic navigation. Improving the accessibility of digital map services for users with visual impairment. Tangible 3D model created from conventional maps and presented to user in a multi-model interaction system with audio assistance. Prototype includes haptic device that presents the user with navigational and structure information of a map dynamically in different levels of details.

Image/Video retrieval. Conventional search largely depend on text/tags. In this work we explore pictorial cue based image/video retrieval based on contents' geometrical property. Supervised learning performed on a database of labelled data and retrieval based on an input image provide relevant result truly represent structural information conveyed by the query image.

Stereo video disparity estimate and perceptual impact in 3DTV. Study on the effect of disparate stereo video quality on human perception. Different bit rate were used when encoding the left/right channel of 3D movies, user evaluation for subjective measurement regarding 3D quality was performed.

Depth Estimation from single image. With advancing machine learning technologies, we further explore the relationship between image features and geometrical structures. This project aims at recovering sufficient amount of depth information from local and global depth information from a single image for 3D reconstruction based on a Conditional Random Field framework.

Virtual Scientific Community Project. A smart social network that encourages scientific collaboration and interaction. Incorporating the advance Web2.0 technology we are aiming at assisting and enhancing messaging passing interactions in a virtual community. (With Rick Chimera, Pat Langley)

Alert-II. Multi-sensory robot that mimics the behaviour of a pet. Using camera, microphone, digital compass and sonar and AI techniques, the robot provides feedback in action with decision from sensor fusion. (with Byron Lahey)

Camera calibration for robotic navigation. Developed a novel computer vision algorithm to achieve stable camera calibration with epipolar constraints based on line and scale invariant point feature (SIFT).

Registration based medical image stereo-matching with haptic feedback. A 2.5D organ representation constructed from images rendered using haptic user interface. The purpose is to better detect the structure of organ surface and create VR environment to enhance physician performance.

Sensing and analysis of massive everyday activity. Acquiring everyday activity patterns using computer vision and other sensing techniques. An experimental media system including a sensor array, an on-line media repository, and a tangible user interface with visual tracking of user input. (with Winslow Burleson, David Birchfield)

A visual tracking based tangible user interface for audio navigation. A table top system enables navigating media contents based on tracking of user activities. (with Hari Sundaram)

TEACHING Graduate Teaching Assistant Arizona State University (2006-2010)
Mentor teacher for COMPUGIRLS (2007-2010)
Guest speaker for Microcomputer Education Conference (MEC) (2008)

AWARDS AND HONORS TEDx Phoenix *Ideas Worth Doing* Challenge winner, TEDx Phoenix 2010.
Graduate and Professional Student Association Research Grant Fall 2008 Arizona State Univ.
Excellent Student Thesis Award, summer 2006. Beijing University of Posts and Telecom.
University Scholarship, 2003-2005, Beijing Univ. of Posts and Telecomm.

PUBLICATIONS X.Zhang, B.Li. *Retrieving Images of Similar Geometrical Configuration* 6th International Symposium on Visual Computing (ISVC) 2010.
X.Zhang, B.Li, *Adaptive Haptic Exploration of Geometrical Structures in Map Navigation for People with Visual Impairment*. IEEE International Symposium on Haptic Audio Visual Environments and Games (HAVE) 2010.
X.Zhang, B.Li, *Impact of disparate video quality in stereo channels duo to compression on stereo perception*. Fourth International Workshop on Video Processing and Quality Metrics for Consumer Electronics (VPQM) 2010.
X.Zhang, J.Ball, L.Kockmanski, C.Granier, S.D.Howe. *Nuclear thermal rocket (NTR) mission assessment I. Evaluate the potential performance of a NTR for interception of a massive low-period comet inbound to Earth*. Journal of Aerospace Engineering, 2009
X.Zhang, J. Zhou, B. Li. *Robust Two-view External Calibration by Combining Lines and Scale Invariant Point features*. 4th International Symposium on Visual Computing (ISVC) 2008.
X.Zhang, J. Zhou, B. Li *Stereoscopic Visualization and Haptic Virtual Exploration of Gastrointestinal Endoscopic Images for Improved Diagnosis*. MMVR16 2007
Archana Paladugu, Xiaolong Zhang and Baoxin Li, *Towards Designing a Crowdsourcing Network for Visually Impaired Users*, 2011 International Conference on Intelligent User Interfaces

SERVICES Member of Association for Computing Machinery (ACM), Institute of Electrical and Electronics Engineers (IEEE), American Nuclear Society (ANS), National Geographic Society, IAESTE.

REFERENCES Available upon request