Xu Liu
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Highlight

- 10 years of research and development on mobile, since Nokia 3650, intensively coding on Symbian S60, Windows CE/Win Mobile/Windows Phone7, iOS and Android
- Founding engineer and manger of Tango VoIP audio and video team
- In-depth knowledge and hands on experience with image/audio/video processing, communication, search and recognition
- Filed 16 U.S. patents and 1 Chinese patent

Professional

2010.10 ~ present, Tango Me Inc.

I was the 10th engineer at Tango, founder and manager of the Media and Device team. My team is responsible for Tango media layer on iPhone, iPod, iPad, Windows, Windows Phone and 1000+ Android devices. We ensure best performance of audio and video as well as other media processing modules, including codec rate control, audio/video codecs, echo cancelation, network rate control, hardware integration and test automation.

2009.1~2010.12, Ricoh Innovations, Menlo Park, CA

Research Scientist, Multimedia team.

2005.1~2008.12, Applied Media Analysis Inc., College Park, MD

Research Intern

Member of IEEE, ACM

Education

2004~2008, University of Maryland, College Park, MD
Ph.D. in Computer Science

2000~2004, Tsinghua University, Beijing, P.R.China
B. Eng in Computer Science, honored graduate of both Tsinghua Univ. & Beijing City

Research Interest

• **Multimedia Communication**   •**Pattern Recognition**

• **Image retrieval**   • **Statistical Learning**   •**Cloud Computing**

Publications

1. Mobile Retriever: Access to Digital Documents from their Physical Source
Xu Liu, David Doermann
International Journal of Document Analysis and Recognition, September 2008, vol. 11, no. 1, pages 19-27

2. VCode – Pervasive Data Transfer Using Video Barcode
Xu Liu, David Doermann, Huiping Li
IEEE Transactions on Multimedia, vol. 10, no. 3, April 2008, pp. 361-371

3. Molecular evolution model of SARS virus and the prediction of its affection
Jincheng Shen, Xu Liu, Yang Liu, Yun Tang
Journal of Nonlinear Dynamics Science and Technology (Chinese), Vol 11, No. 1-2, June 04

4. A Camera-based Mobile Data Channel: Capacity and Analysis
Xu Liu, David Doermann, Huiping Li
ACM International Conference on Multimedia, Oct. 2008, pages 359-368

5. A Novel 2D Marker Design and Application in Object Tracking and Event Detection
Xu Liu, David Doermann, K. C. Lee
4th International Symposium on Visual Computing 2008, Dec. 2008, pages 248-257

6. A Camera Phone Based Currency Reader for the Visually Impaired
Xu Liu
Tenth International ACM SIGACCESS Conference on Computers and Accessibility, Oct. 2008, pages 305-306

7. Camera Phone Based Tools for the Visually Impaired
Xu Liu, David Doermann, Huiping Li
First International Workshop on Mobile Multimedia Processing, 2008

8. A robust real-time abnormal region detection framework for capsule endoscopy images
Yanfen Cheng, Xu Liu, Huiping Li
SPIE Medical Imaging, pages 7264-17, Feb. 2009

9. Mobile Retriever – Search among 12K documents with a partial snapshot
Xu Liu, David Doermann

Second International Workshop on Camera-Based Document Analysis and Recognition, September, 2007

10. Document Image Mosaicing with Mobile Phones
Jari Hannuksela, Pekka Sangi, Janne Heikkila, Xu Liu, David Doermann
ICIAP 07, 14th International Conference on Image Analysis and Processing
September, 2007

11. Imaging as an Alternative Data Channel for Camera Phones
Xu Liu, David Doermann, Huiping Li , best paper on
5th International Conference on Mobile and Ubiquitous Multimedia, December, 2006

12. Fast Camera Motion Estimation for Hand-held Devices and Applications
Xu Liu, David Doermann, Huiping Li
4th International Conference on Mobile and Ubiquitous Multimedia, December, 2005

13. Using Computer Vision to Detect Web Browser Display Errors
Xu Liu, David Doermann
3rd International Workshop on Web Document Analysis, Seoul, Korea, August, 2005

14. A Middleware Based Mobile Scientific Computing System—MobileLab
Xi Wang, Xu Liu, Xiaoge Wang, Yu Chen
The 3rd International Conference on Grid and Cooperative Computing (GCC2004), Wuhan, China, 2004

15. Generic Slow-motion Replay Detection in Sports Video (Jan, 2004)
Lei Wang, Xu Liu, Steve Lin, Guangyou Xu, Heung-Yeung Shum
IEEE International Conference on Image Processing (ICIP'04), Singapore, 2004

16. Image Orientation Detection with Integrated Human Perception Cues (December, 2002)
Lei Wang , Xu Liu, Lirong Xia, Guangyou Xu, Alfred Bruckstein
IEEE International Conference on Image Processing (ICIP'03), Barcelona , Spain , September, 2003

17. Computational inter-painting search by cross-correlation for evidence of counter proofing in the works of Jan van der Heyden
Xu Liu, David Stork, Petria Noble
SPIE Computer Vision and Image Analysis of Art, EI108, Jan 2010

18. Mobile Multimedia Processing: Fundamentals, Methods, and Applications
Xu Liu, David Doermann, Huiping Li
Book Chapter accepted to be published by Springer LNCS

19. Real-time Mobile Interaction with Paper Documents
Xu Liu, Jonathan Hull

Accepted by 8th ACM International Conference on Mobile and Ubiquitous Multimedia (MUM 2009)

20. Mobile Image Recognition: Architectures and Tradeoffs
Jonathan J. Hull, Xu Liu, Berna Erol, Jamey Graham, Jorge Moraleda
best Presentation of ACM HotMobile 2010 (24% acceptance rate)

21. Mobile Visual Search, Linking Printed Documents to Digital Media
Xu Liu, Jonathan Hull, Jamey Graham, Jorge Moraleda, Timothee Bailloeul
23rd IEEE Conference on Computer Vision and Pattern Recognition (demo)

Honors & Awards

2010	Best presentation of ACM HotMobile 2010
2009	**First** place of ACM Student Research Competition Grand Final 09 (http://www.acm.org/src/)
2008	Second place in ACM Student Research Competition on ASSETS 08
2006	Best Paper award on 5th International Conference on Mobile and Ubiquitous Multimedia (MUM06)
2004	Honored Undergraduate of both Tsinghua University and Beijing City
2004	Second Prize on national Mathematical Contest in Modeling
2004	"Computer World" Scholarship
2003	National Network Computing Contest by Education Ministry of China, 3rd Prize
2003	Third Prize on national Mathematical Contest in Modeling
2003	**IBM** outstanding students' Scholarship, **First** Prize
2002	National Scholarship for best students in China , **First** Prize(1st of all B.E. students' awards in CS Dept. Tsinghua Univ.)
2001	Winner of the Artificial Intelligent Programming Contest of Tsinghua Univ. , **First** Prize
2001	Scholarship of best academic record, **First** Prize

Skills

• Programming Languages:

C/C++ (skillful), Pascal (skillful), Java, C#, Assembly, PHP, MATLAB, Windows Script

• Knowledge & skill:

Windows Mobile /Win32 programming;   Familiar with Symbian C++, Microsoft COM; Algorithm optimization for mobile devices.

Activities

Program committee of 20th International Conference on Pattern Recognition (ICPR2010)
Program committee of 9th ACM International Conference on Image and Video Retrieval (CIVR2010)
Program committee of 1st International Workshop on Paper Computing (on UBICOMP 2010)

Reviewer, IEEE Transactions on Mobile Computing
Reviewer, IEEE Conference on Computer Vision and Pattern Recognition, 09

Reviewer, ACM SIG CHI conference, 09,10,11
Reviewer, IEEE Transactions on Neural Systems and Rehabilitation Engineering
Reviewer, International Journal of Document Analysis and Recognition (IJDAR)
Reviewer, Journal of Multimedia
Reviewer, International Conference on Mobile and Ubiquitous Multimedia 06,07
Reviewer, International Conference on Document Analysis and Recognition 05,07,09
Reviewer, International Workshop on Document Analysis Systems, DAS 08,10

Invited Talk, "Mobile Vision to Facilitate Physical World Interaction", January 2008, Carnegie Mellon University

Invited Talk, "Camera Phone based Document Retrieval System", September 2009, Stanford Computer Forum Mobile Visual Search Workshop

Invited Talk, "Mobile Visual Search, Linking Printed Documents to Digital Media", June 2010, Stanford EE Department Ambient Intelligence workshop

Research and engineering performed at Applied Media Analysis Inc, kernel design and implementation of an OCR system on PDA; developed pattern recognition and camera motion estimation system on camera phones; invented VCode (patented, www.mobileama.com). Work also include SBIR proposal and report writing, cooperation with BBN, CACI, CSIT, NIH, NSF, LDC and DARPA.