Zixia Huang

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EDUCATION

University of Illinois at Urbana-Champaign (GPA: 3.80/4.0) **Urbana, IL**
Ph.D. in Computer Science **2009.04-2012.Summer (Estimated)**
M.S. in Electrical and Computer Engineering **2006.08-2009.04**

Shanghai Jiao Tong University (GPA: 3.86/4.0) **Shanghai, China**
B.Eng. in Electronics and Information Engineering **2002.09-2006.06**

OBJECTIVE

To seek full-time position of research or software engineering with H1B visa sponsorship (current status: F-1 visa)

INTERESTS

Distributed system, cloud computing, mobile networking, multimedia streaming (VoIP, 2D and 3D videos, Haptics)

INDUSTRIAL EXPERIENCE

Summer Research Intern, Samsung Information System Americas, San Jose, CA, **05/2010-08/2010**

- **Design and implementation of real-time 3D stereoscopic video conferencing**
- **Parallelization of H.264 multi-view codec (MVC) on Tilera many-core platform**
- **Evaluation of 3D video quality on Samsung 3DTV and Samsung mobile phones**

Summer Research Intern, Bell Labs, Alcatel-Lucent, Murray Hill, NJ, **05/2009-08/2009**

- **Design and implementation of cloud-based on-demand video transcoding and distribution system**
- **Optimal task placement in cloud/grid computing infrastructure**
- **Multi-machine multi-core parallelization of H.264 scalable video codec based on JSVM**

Student Challenge, Microsoft Corporation, Shanghai, China and Redmond, WA, **02/2005-06/2005**

- **EBox-II development with Windows CE programming**
- **Design an intelligent order system for fast food restaurants**
- **Participate in Windows Embedded Student ChallengE 2005, ranked TOP TEN among world finalists**

RESEARCH EXPERIENCE

Department of Computer Science, University of Illinois at Urbana-Champaign, **04/2009-Now**

- **H-Media: 3D tele-immersive distributed system design**
  - **Real-time streaming and processing of multi-modal media data in tele-immersion**
  - **Optimization of tele-immersive applications in wireline and wireless 802.11 systems**
  - **Synchronization and fault tolerance in distributed systems**
  - **Power management for mobile devices**
  - **Quality of experience (QoE) and subjective assessment of 3D tele-immersion**
- **Large-scale data monitoring and analysis**
  - **Classification algorithm for real-time large-scale media data**
  - **Modeling of Internet statistics using linear/non-linear regression**

Continued on the reverse side

Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, **08/2006-04/2009**

- **Network-related Linux kernel modifications**
  - **Device modifications for load-balancing**
  - **Transport and network layer modifications for packet routing and forwarding control**
- **Multimedia protocols and QoS**
  - **Evaluation of audio and video codecs under Internet dynamics**
  - **Design and optimization of VoIP conferencing (both Visual C++ & Linux C Version, more than 6000 lines)**
  - **Implementation of multimedia related protocols: RSVP, RTP/RTCP and SIP**
  - **Skype/MSN Messenger/GoogleTalk performance measurement**
  - **Evaluation of peer-to-peer IPTV systems (PPLIVE, PPSTREAM and COOLSTREAMING)**

PUBLICATIONS (JOURNAL, CONFERENCE & THESIS)

- **Two journal papers are in preparation (to be submitted in April/May, 2012)**
- **[INFOCOM'12] *Z. Huang* and K. Nahrstedt, "Perception-based playout scheduling for high-quality real-time interactive multimedia", In Proceedings of IEEE International Conference on Computer Communications (INFOCOM) miniconference, Mar 2012.**
- **[MMSYS'12] *Z. Huang*, A. Arefin, P. Agarwal, K. Nahrstedt and W. Wu, "Towards the understanding of human perceptual quality in tele-immersive shared activity", In Proceedings of ACM Multimedia Systems Conference (MMSYS), Feb 2012.**
- **[ICDCS'12] A. Arefin, *Z. Huang*, K. Nahrstedt and P. Agarwal, " 4D TeleCast: Towards Large Scale Multi-site and Multi-view Dissemination of 3DTI Contents", In Proceedings of IEEE International Conference on Distributed Computing Systems (ICDCS), Jun 2012.**
- **[INFOCOM'11] *Z. Huang*, C. Mei, L. Li and T. Woo, "CloudStream: delivering high-quality streaming video through a cloud-based H.264/SVC proxy", In Proceedings of IEEE International Conference on Computer Communications (INFOCOM) miniconference, Apr 2011.**
- **[MMSYS'11] *Z. Huang*, W. Wu, K. Nahrstedt, R. Rivas and A. Arefin, "SyncCast: synchronized dissemination in multi-site interactive 3D tele-immersion", In Proceedings of ACM Multimedia Systems Conference (MMSYS), Feb 2011.**
- **[MM'11] *Z. Huang*, "Synchronized dissemination framework for supporting high-quality tele-immersive shared activity", In Proceedings of ACM International Conference on Multimedia (MM) doctoral symposium paper, Nov 2011.**
- **[MMDEMO'11] A. Arefin, *Z. Huang*, R. Rivas, S. Shi, W. Wu and K. Nahrstedt, "Tele-immersive gaming for everybody", In Proceedings of ACM International Conference on Multimedia (MM) demo paper, Nov 2011.**
- **[NOSSDAV'10] *Z. Huang*, W. Wu, K. Nahrstedt, A. Arefin, R. Rivas, TSync: A new synchronization framework for multi-site 3D tele-immersion, ACM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), Jun 2010.**
- **[MS'09] *Z. Huang*, The Design of a Multi-party VoIP Conferencing System, Master Thesis, University of Illinois, May 2009.**
- **[ICME'08] *Z. Huang*, B. Sat, B. Wah, Automated learning of play-out scheduling algorithms for improving perceptual conversational quality of multi-party VoIP, IEEE Conference on Multimedia and Expo (ICME), Jun 2008.**
- **[ISM'07] B. Sat, *Z. Huang*, B. Wah, The design of a multi-party VoIP conferencing system over the internet, IEEE Symposium on Multimedia (ISM), Dec 2007.**
- **[UIUC'11] *Z. Huang*, A. Arefin, P. Agarwal, K. Nahrstedt and W. Wu, "Understanding of human perceptual quality in tele-immersive shared activity ", In University of Illinois Technical Report, Dec 2011.**
- **[ISM'10] W. Wu, A. Arefin, *Z. Huang*, P. Agarwal, S. Shi, R. Rivas, K. Nahrstedt, "I'm the Jedi!" - A case study of user experience in 3D tele-Immersive gaming, IEEE Symposium on Multimedia (ISM), Dec 2010.**
- **[NOSSDAV'11] P. Agarwal, R. Rivas, W. Wu, A. Arefin, *Z. Huang* and K. Nahrstedt, "SAS Kernel: Streaming as a Service Kernel for Correlated Multi-Streaming", In Proceedings of ACM Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV), Jun 2011.**

- **[MTAP'11] K. Nahrstedt, A. Arefin, R. Rivas, P. Agarwal, *Z. Huang*, W. Wu, Z. Yang, QoS and resource management in distributed interactive multimedia environments, Springer International Journal of Multimedia Tools and Applications, Special Issue, Jan 2011.**
- **[ISM'10] A. Arefin, K. Nahrstedt, R. Rivas, J. Han and *Z. Huang*, "DIAMOND: correlation-based anomaly monitoring daemon for DIME", In Proceedings of IEEE International Symposium on Multimedia (ISM), Dec 2010.**

PATENT

- **P. Agarwal, R. Rivas, W. Wu, A. Arefin, *Z. Huang* and K. Nahrstedt, "SAS Kernel: Streaming as a Service Kernel for Correlated Multi-Streaming", US Patent (Provisional Application), filed in June 2011.**

TEACHING EXPERIENCE

2009 Spring ECE 410 Digital Signal Processing I
2008 Fall ECE 551 Digital Signal Processing II
2008 Spring ECE 435 Computer Networking Laboratory
2007 Fall ECE/CS 438 Computer Networks

DEMOS

1. **3D tele-immersive gaming, in ACM International Conference on Multimedia, Scottsdale, AZ, Nov 2011.**
2. **Stereoscopic 3D video conferencing on Samsung 3DTV, in Samsung Intern Workshop, San Jose, CA, Aug 2010.**
3. **Transatlantic performance for 3D tele-immersive video conferencing, in ACM Workshop on Network and Operating Systems Support for Digital Audio and Video, Amsterdam, the Netherlands, Jun 2010.**
4. **3D tele-immersive video conferencing, in 3D/4D Multimedia Industry/Academia Symposium, Urbana, IL, May 2010.**
5. **3D tele-immersive gaming, in Illinois Engineering Open House, Urbana, IL, Mar 2010.**
6. **Cloud-based 2D video transcoding and distribution, in Bell Labs Intern Demo Session, Murray Hill, NJ, Aug 2009.**

MEDIA COVERAGE AND HONORS

2009 Featured on Wired (http://bit.ly/OC4FW) and Forbes (http://bit.ly/4D1PS) for the tele-immersive project
2011 Featured in ACM Multimedia'11 Historical Preservation Video for the tele-immersive gaming project
2011 2011 NSF student travel award
2011 ACM MM'11 student scholarship
2011 Illinois graduate college conference travel award
2008 Winner of second place in IPTV implementation competition sponsored by PAVLOV media at UIUC (2008)
2005 Microsoft Windows Embedded Student ChallengE, TOP TEN world finalists
2005 General Electric (GE) Global Foundation Scholarship
2004 Taiwan Industry & Technology Research Institute, Pan Wen-Yuan Foundation Scholarship
2003 Exceptional student at Shanghai Jiao Tong University

PROFESSIONAL ACTIVITIES

Session Chair	**ACM Multimedia Systems Conference, Chapel Hill, NC, Feb 2012**
Journal Reviewer	**IEEE JSAC, IEEE J-STSP, ACM TOMCCAP and Springer CSSP**
Conference Reviewer	**IEEE PERCOM and IEEE INFOCOM**
Student Member	**IEEE, ACM and ACM SIGMM**
Student Member	**NSPE and ISPE**

COMPUTER SKILLS

VISUAL STUDIO C/C++/C#, LINUX/UNIX C/C++, PERL, PASCAL, MATLAB, OPENMP

REFERENCES (more upon request)

Klara Nahrstedt, Professor, Department of Computer Science, University of Illinois, E-mail: klara@cs.uiuc.edu