

# Wanmin Wu

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Urbana, IL 61801 USA      *Homepage:* <http://cairo.cs.uiuc.edu/~wwu23>
- INTERESTS**      Multimedia, Distributed Systems, Human-Centric Computing
- EDUCATION**      **University of Illinois at Urbana-Champaign**, Urbana, Illinois, USA  
Ph.D. Candidate (post-qualifier), Computer Science, December 2010 (Expected)
- Zhejiang University**, Hangzhou, Zhejiang, China  
B.S., Computer Science, June 2004
- HONORS AND AWARDS**      IBM Watson Emerging Leaders in Multimedia (*awarded to 12 students internationally*), 2008.  
Yahoo! Key Technical Challenge Grant, \$5,000 unrestricted research funds (*awarded to 12 students internationally*), 2007.  
Second Place Award, ACM Student Research Competition, 2007.  
Student Scholarships, ACM-W 2008, SOSP'07, GHC'07, CRA-W Grad Cohort 2007 and 2008.  
Best Project Award, CS525 Advanced Distributed Systems (*graduate-level course*), 2007.
- PUBLICATIONS**      **Wanmin Wu**, Ahsan Arefin, Raoul Rivas, Klara Nahrstedt, Renata Sheppard, Zhenyu Yang, "Quality of Experience in Distributed Interactive Multimedia Environments: Toward a Theoretical Framework", in Proceedings of ACM International Conference on Multimedia (**MM'09**), 2009 (*acceptance rate = 16%*).
- Wanmin Wu**, Raoul Rivas, Ahsan Aren, Shu Shi, Renata M. Sheppard, Bach D. Bui, Klara Nahrstedt, "MobileTI: A Portable Tele-Immersive System", in Proceedings of ACM International Conference on Multimedia (**MM'09**), 2009.
- Wanmin Wu**, Zhenyu Yang, Klara Nahrstedt, "Dynamic overlay multicast in 3D video collaborative systems", ACM Workshop on Network and Operating System Support for Digital Audio and Video (**NOSSDAV'09**), 2009 (*top top 3.84% impact rating on CiteSeer*).
- Albert Sidelnik, I-Jui Sung, **Wanmin Wu**, María Jesús Garzarán, Wen-mei Hwu, Klara Nahrstedt, David Padua, Sanjay Patel, "Optimization of Tele-Immersion Codes", the 2nd Workshop on General-Purpose Computation on Graphics Processing Units (GPGPU), associated with **ASPLOS'09**, 2009.
- Rahul Malik, **Wanmin Wu**, Klara Nahrstedt, "Modeling tele-immersive systems using stochastic activity network", IEEE International Conference on Multimedia & Expo (**ICME'09**), 2009 (*Best Paper Award runner-up*).
- Wanmin Wu**, Zhenyu Yang, Dongyun Jin, Klara Nahrstedt, "Implementing a distributed 3D tele-immersive system", IEEE International Symposium on Multimedia (**ISM'08**), 2008.
- Zhenyu Yang, **Wanmin Wu**, Klara Nahrstedt, Gregorij Kurillo and Ruzena Bajcsy, "Enabling multi-party 3D tele-immersive environments with ViewCast", ACM Transactions on Multimedia Computing, Communications, and Applications (**TOMCCAP**), 2008.
- Wanmin Wu**, Zhenyu Yang and Klara Nahrstedt, "A study of visual context representation and control for remote sport learning tasks", World Conference on Educational Multimedia, Hypermedia

and Telecommunications (**ED-MEDIA'08**), 2008.

Renata Sheppard, Mahsa Kamali, Raoul Rivas, Morihiko Tamai, Zhenyu Yang, **Wanmin Wu**, Klara Nahrstedt, "Advancing Interactive Collaborative Mediums through Tele-immersive Dance (TED): a Symbiotic Creativity and Design Environment for Art and Computer Science", ACM Multimedia (**MM'08**), 2008 (*acceptance rate = 16%*).

Morihiko Tamai, **Wanmin Wu**, Klara Nahrstedt, Keiichi Yasumoto, "A view control interface for 3D tele-immersive environments", IEEE International Conference on Multimedia & Expo (**ICME'08**), 2008.

**Wanmin Wu**, Zhenyu Yang, Indranil Gupta, Klara Nahrstedt, "Towards multi-site collaboration in 3D tele-immersive environments", IEEE International Conference on Distributed Computing Systems (**ICDCS'08**), 2008 (*acceptance rate = 16%*).

Zhenyu Yang, **Wanmin Wu**, Klara Nahrstedt, Gregorij Kurillo, Ruzena Bajcsy, "ViewCast: View dissemination and management for multi-party 3D tele-immersive environments", ACM Multimedia (**MM'07**), 2007 (*acceptance rate = 17%*).

**Wanmin Wu**, Zhenyu Yang, Klara Nahrstedt, Gregorij Kurillo, Ruzena Bajcsy, "Towards multi-site collaboration in tele-immersive environments", ACM Multimedia (**MM'07**), 2007.

Klara Nahrstedt, Ruzena Bajcsy, Lisa Wymore, Gregorij Kurillo, Katherine Mezur, Renata Sheppard, Zhenyu Yang, **Wanmin Wu**, "Symbiosis of tele-immersive environments with creative choreography", ACM Workshop on Supporting Creative Acts Beyond Dissemination, associated with 6th ACM Creativity and Cognition Conference (**CCC'07**), 2007.

Zhenyu Yang, Bin Yu, **Wanmin Wu**, Klara Nahrstedt, Ross Diankov, and Ruzena Bajcsy, "A study of collaborative dancing in tele-immersive environment", the 8th IEEE International Symposium on Multimedia (**ISM'06**), 2006.

Zhenyu Yang, Bin Yu, Ross Diankov, **Wanmin Wu**, and Ruzena Bajcsy, "Collaborative dancing in tele-immersive environment", ACM Multimedia (**MM'06**), 2006.

INVENTION  
DISCLOSURE

ViewCast: the inter-connection and quality-of-service management for multi-site/multi-stream 3D tele-immersive environments, co-invented with Dr. Zhenyu Yang and Dr. Klara Nahrstedt.

RESEARCH  
EXPERIENCE

### **Performance Measurements in Distributed 3D Tele-Immersive Systems**

*Advisors: Klara Nahrstedt (UIUC)*

March 2008 - June 2008

Investigated the performance issues in a distributed 3D tele-immersive system. Examined the system as a pipeline, and measured various metrics including latency, visual quality, and resilience. [ISM'08]

### **Distributed Infrastructure for 3D Tele-Immersion**

*Advisors: Klara Nahrstedt, Indranil Gupta (UIUC)*

January 2007 - November 2007

Initiated a project on distributed data management for 3D tele-immersion using the publish-subscribe model. Investigated the problem of overlay construction with a spectrum of algorithms. [ICDCS'08]

### **Real-Time Semantic-Aware Video Stream Dissemination**

*Advisor: Klara Nahrstedt (UIUC)*

February 2007 - June 2008

Designed and implemented a general framework, ViewCast, for semantic-aware data dissemination in multi-site/multi-stream multimedia systems. [MM'07][TOMCCAP]

### **3D User Interface**

*Advisor: Klara Nahrstedt (UIUC)*

January 2007 - May 2007

Developed a user interface for wireless view control for 3D virtual environments using Wii remotes. Studied it with a group of dancers in a class. [ICME'08]

### **Human Factor Study in Remote Collaboration**

*Advisor: Klara Nahrstedt (UIUC)*

January 2006 - December 2006

Studied collaborative activities with dancers and basketball players using 3D tele-immersive (3DTI) environments. Designed the study methodologies, questionnaires, and controlled experiments. [MM'06] [ISM'06] [MM'07] [ED-MEDIA'08]

#### TALKS

Implementing a distributed 3D tele-immersive system, IEEE International Symposium on Multimedia, Berkeley, CA, 2008.

Towards multi-site collaboration in 3D tele-immersive environments, IEEE International Conference on Distributed Computing Systems, Beijing, China, 2008.

Symbiosis of tele-immersive environments with creative choreography, ACM Workshop on Supporting Creative Acts Beyond Dissemination, Washington D.C., 2007.

#### PROFESSIONAL ACTIVITIES

**Reviewer** for IEEE Transactions on Information Forensics & Security (ToIFS).

**Reviewer** for Multimedia Systems Journal.

**Volunteer** at the 17th International workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV'07).

**Editorial Board Member** for the Association for Computing Machinery's Special Interest Group on Multimedia (SIGMM) website.

**Student Member** of Association for Computing Machinery (ACM) and Institute of Electrical and Electronics Engineer (IEEE).