WENYU JIANG

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EDUCATION

Columbia University, New York, NY
Ph.D. Computer Science, May 2003 — GPA 4.07/4.33, Major GPA 4.19/4.33
Dissertation: QoS Measurement and Management for Internet Real-time Multimedia Services
M.S. Computer Science, February 1997 — GPA 4.07/4.33, Major GPA 4.19/4.33

University of Bridgeport, Bridgeport, CT
B.S. Computer Engineering, May 1995 — GPA 3.85/4.0, Major GPA 4.0/4.0

Shanghai Jiao Tong University, Shanghai, China
studied Computer Science, 1991-1993 — GPA 3.7/4.0, Major GPA 3.9/4.0

PROFESSIONAL EXPERIENCE

Bell Laboratories *Research Intern* Holmdel, NJ — Summer 2000
Studied performance of Mobile Switching Center (MSC) for GSM and other cellular phone networks under various configurations of population and traffic mix. Implemented C++/CORBA-based GSM base station and switch simulators for MSC study.

Hewlett-Packard Laboratories *Research Intern* Palo Alto, CA — Summer 1999
Directly responsible for a multicast performance and availability management project. Designed and implemented a Multicast Routing Monitor (MRM) manager API. Integrated MRM manager implementation with network management software suite HP OpenView.

IBM Watson Research Center *Research Intern* Yorktown Heights, NY — Summer 1998
Analyzed Internet end-to-end performance including: Asymmetric link speed measurement, Per hop and Bottleneck link speed measurement, Calibration of TCP/IP protocol stack delay.

Coopers & Lybrand, L.L.P. *Intern* New York, NY — Summer 1997
Implemented ICE - a toolkit for persistent C++ object-oriented programming in relational database (RDBMS) and for agent-based simulation. Programmed in C++ using STL (Standard Template Library) and using Embedded SQL with Oracle ProC. Researched 3-D data visualization using MineSet on SGI.

ACADEMIC AND PROJECT EXPERIENCE

Columbia University *Graduate Research Assistant* — 1995 - Present

· VoIP Quality of Service (QoS) measurement, monitoring and management — 1999 - Present
Worked as principal researcher for this series of projects. Devised and analyzed techniques for improving Voice over IP (VoIP) quality over the Internet. Evaluated quality and performance of today's IP phones and soft-phone clients. Measured and assessed VoIP service availability in the current Internet. Investigated QoS metrics for capturing loss/delay correlation and studied their impact on VoIP service quality.

· Implementation of Internet Telephony testbed at Columbia University — 1999 - 2002
Worked as a member of this project and led the PBX/PSTN to IP integration task. Co-designed and co-implemented the SIP based, fully functional IP Telephony testbed with various advanced services.

· Co-developed sipd, an Internet Telephony server based on SIP — 1998 - 2000
Worked as a member of this project. sipd is later used in the IP telephony testbed deployed during 1999-2002.

· Co-developed the *Oz* software development environment package — 1995 - 1998

SKILLS

Programming Languages

C/C++, CORBA, Java, SQL, Perl, Tcl/Tk, JavaScript, Common Lisp, Scheme, Pascal, Fortran, MIPS Assembly, AHDL (Altera Hardware Description Language)

Internet Protocol Knowledge

VoIP/IP Telephony: RTP/RTCP, SIP, H.323, SDP, SAP, RTSP
General: TCP/IP, UDP, ICMP, DNS, SNMP, RPC, HTTP, CGI, SMTP, TFTP, BOOTP, NFS
Routing: IGMP, PIM, RIP, OSPF, BGP

System Knowledge

Pthread, Unix system and shell programming, Unix & Windows system administration, Cisco IOS router administration, X-Windows programming in XView and Motif

Tools

Tcl/Tk, Perl, LaTeX, Lex, Yacc, CVS, RCS, Make, Sed, Awk, gdb, jdb and various unix tools, Visual C++, SparcPro Sun Workshop, JDK, Visual Cafe, JBuilder

SELECTED PUBLICATIONS

Wenyu Jiang and Henning Schulzrinne. Assessment of VoIP Service Availability in the Current Internet. *Passive and Active Measurement Workshop (PAM)*, La Jolla, California, April 2003.

Wenyu Jiang and Henning Schulzrinne. QoS Evaluation of VoIP End-points. *IEEE International Conference on Communications (ICC)*, Anchorage, Alaska, May 2003.

Wenyu Jiang and Henning Schulzrinne. Comparisons of FEC and Codec Robustness on VoIP Quality and Bandwidth Efficiency. In *IEEE International Conference on Networks (ICN)*, Atlanta, Georgia, August 2002.

Wenyu Jiang, Jonathan Lennox, Sankaran Narayanan, Henning Schulzrinne, Kundan Singh and Xiaotao Wu. Deploying Internet Telephony Services. *IEEE Internet Computing magazine*, 6(3):64-72, May/June 2002.

Wenyu Jiang and Henning Schulzrinne. Speech Recognition Performance as an Effective Perceived Quality Predictor. In *IEEE International Workshop on Quality of Service*, Miami, Florida, May 2002.

Wenyu Jiang, Jonathan Lennox, Henning Schulzrinne and Kundan Singh. Towards Junking the PBX: Deploying IP Telephony. In *ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*, Port Jefferson, New York, June 2001.

Wenyu Jiang and Henning Schulzrinne. Analysis of On-Off Patterns in VoIP and Their Effect on Voice Traffic Aggregation. In *IEEE International Workshop on Computer Communications and Networks (ICCCN)*, Las Vegas, NV, October 2000.

Wenyu Jiang and Timothy F. Williams. Detecting and Measuring Asymmetric Links in an IP Network. In *IEEE Global Communications Conference (Globecom)*, Rio de Janeiro, Brazil, November 1999.

HONOR SOCIETIES AND AWARDS

Members of IEEE, ACM, and Upsilon Pi Epsilon

Awards from IEEE and other conferences

Top 3 best student papers (out of 13), PAM 2003

Named among the best papers, ICN 2002

IEEE Student Travel Grant, Globecom 1999, only to selected authors with accepted papers

Awards from Shanghai Jiao Tong University

Guang Hua Scholarship, Fall 1992, only to top 30 students out of 2500

Honor of Ultra-Excellent Student, Fall 1992, only to top 1% students out of 2500

ELITE Scholarship, Fall 1991, only to top 40 students out of 2500