

CURRICULUM VITAE

Nam Ling, Ph.D., IEEE Fellow

Associate Dean for Research & Faculty Development, School of Engineering

Professor, Department of Computer Engineering

Santa Clara University

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As of Date: January 15, 2010

MAJOR POSITIONS (EMPLOYMENTS)

Current Position:

Professor (tenured), Department of Computer Engineering, and
Associate Dean for Research and Faculty Development, School of Engineering,
Santa Clara University, Santa Clara, California, USA.

July 2007 – present:

Associate Dean for Research and Faculty Development, School of Engineering, Santa Clara University, Santa Clara, California, USA.

September 2001 - Present:

Professor (tenured), Department of Computer Engineering, Santa Clara University, Santa Clara, California, USA.
(Also **Director, Multimedia Compression Laboratory**, Department of Computer Engineering, Santa Clara University, 1997 - present.)

June 2002 – June 2007:

Associate Dean for Graduate Studies and Research, School of Engineering, Santa Clara University, Santa Clara, California, USA.

(Acting Associate Dean, School of Engineering, Santa Clara University, May 2002.)

Acting Dean, School of Engineering, Santa Clara University (during various short periods in 2004 - 2006.)

September 1994 – August 2001:

Associate Professor (tenured), Department of Computer Engineering, Santa Clara University, Santa Clara, California, USA.

September 1999 – December 1999:

Acting Chair, Department of Computer Engineering, Santa Clara University, Santa Clara, California, USA.

September 1989 - August 1994:

Assistant Professor, Department of Computer Engineering (previously Department of Electrical Engineering and Computer Science), Santa Clara University, Santa Clara, California, USA.

(Also **Arthur Vining Davis Junior Faculty Fellow**, July 1, 1991 - September 30, 1992.)

August 1984 - July 1989:

Research Assistant and Teaching Assistant in The Center for Advanced Computer Studies and the Department of Electrical and Computer Engineering, University of Southwestern Louisiana, Lafayette, Louisiana, USA (now known as University of Louisiana at Lafayette).

May 1981 - December 1983:

Process Engineer and Product Engineer, Hewlett Packard (HP) Company, Singapore.

Responsibilities: Computer IC chips product development and transfer to production, equipment procuring, packaging, testing, and failure analysis.

OTHER POSITIONS (EMPLOYMENT/LONG TERM CONSULTING)

September 2002 - Present:

Consulting Professor, NUS College in Silicon Valley, National University of Singapore (NUS).

January 1998 – August 1998 (On sabbatical leave from Santa Clara University):

Senior Research Fellow, Center for Signal Processing, Nanyang Technological University, Singapore.

1994 – Present:

In addition to above, for a complete list of visiting and consulting positions, please see the section on visiting and consulting positions.

EDUCATION

Ph.D. (Computer Engineering), The Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, Louisiana, USA (then known as University of Southwestern Louisiana), December 1989.
(GPA = 4.0 out of 4.0)

Ph.D. Dissertation: “Systolic Temporal Arithmetic: A New Formalism for Specification, Verification, and Synthesis of Systolic Arrays.”

M. S. in Computer Engineering, The Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, Louisiana, USA (then known as University of Southwestern Louisiana), December 1985.
(GPA = 4.0 out of 4.0)

M.S. Thesis: “Mixed Packet Design for Packetized Voice Transmission over Integrated Services Digital Network.”

B. Eng. (Electrical Engineering), National University of Singapore, Singapore, May 1981.

HONORS AND AWARDS

(1) ACADEMIC / PROFESSIONAL HONORS AND AWARDS:

- 1. IEEE Fellow - for contributions to video coding algorithms and architectures**, elevated on November 15, 2007, effective January 1, 2008.
(This is one of the most prestigious honors of the IEEE and is bestowed upon a very limited number of Senior Members who have made outstanding contributions to the electrical and information technologies and sciences for the benefit of humanity and the profession. The number of IEEE Fellows elevated in a year is no more than 0.1% of the total IEEE voting membership. The IEEE Fellow is the highest grade of membership in the IEEE)
- 2. University Award for Sustained Excellence in Scholarship**, Santa Clara University, awarded on September 11, 2007.
(This is the University’s highest honor for scholarly achievement. This award recognizes the outstanding achievements of a faculty member who has demonstrated sustained excellence in scholarly or creative work and who has been a member of the faculty of Santa Clara University for a minimum of ten years. Only one award given each year)
- 3. IEEE Distinguished Lecturer (Circuits and Systems)**, named for 2007 – 2008 (second time).
(Appointed as a distinguished speaker in The Institute of Electrical and Electronics Engineers (IEEE) Circuits and Systems Society Distinguished Lecturer Program)
- 4. President’s Recognition Award**, Santa Clara University, awarded on September 13, 2005.
(The President’s Recognition Award honors faculty who set an example for students and colleagues as teaching scholars and whose recent work has advanced the mission of Santa Clara in significant ways)
- 5. 2003 IEEE ICCE Best Paper Award (First Place Winner)** for our paper, Gunnar Hovden and Nam Ling, “MPEG-4 FAP Generation as an Optimization Problem.” Award was received at the 2005 IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, on January 11, 2005.
(This award is given to the best paper presented at the IEEE International Conference on Consumer Electronics (also published in the Digest of Technical Papers for ICCE) each year. Our winning paper was presented at the

conference in Los Angeles, California, USA, June 17 – 19, 2003. Our paper was the first place winner. ICCE is the flagship conference of The Institute of Electrical and Electronics Engineers (IEEE) Consumer Electronics Society)

6. **University Award for Recent Achievement in Scholarship**, Santa Clara University, awarded on September 17, 2002.
(One of the two highest honors bestowed by Santa Clara University recognizing faculty scholarship. It was created in year 2000 to recognize scholarly or creative work by a faculty member over the previous five years, and the work represents a major contribution to a field of knowledge or to the arts. Only one award given each year. Ling is the third recipient of this award since its creation)
7. **IEEE Distinguished Lecturer (Circuits and Systems)**, named for 2002-2003.
(Appointed as a distinguished speaker in The Institute of Electrical and Electronics Engineers (IEEE) Circuits and Systems Society Distinguished Lecturer Program)
8. **1999 Researcher of the Year**, School of Engineering, Santa Clara University, awarded on May 13, 2000.
(One of the highest honors bestowed by Santa Clara University School of Engineering. It was created to recognize scholarly achievements on the part of the faculty. Only one award given each year)
9. **IEEE Senior Membership**, awarded on February 6, 1999.
(Awarded by The Institute of Electrical and Electronics Engineers (IEEE) in recognition of experience reflecting professional maturity and significant professional achievements)
10. **Appreciation Plaque for Outstanding Contribution on Leading MPEG-4 Activity**, Centre for Signal Processing, Nanyang Technological University, Singapore, awarded on August 21, 1998.
(Awarded by the organization in appreciation of leadership in MPEG-4 activity. This research led to a major business contract with a multi-national company)
11. **IEEE Computer Society Certificate of Appreciation**, awarded August 25, 1997.
(For service to the IEEE Computer Society by serving as General Chair of the 1995 Hot Chips Symposium)
12. **Outstanding Achievement Award in Teaching, Research, and Service**, Santa Clara University, awarded on April 3, 1992.
(Awarded by Santa Clara University to faculty members with outstanding achievement in teaching, research, and service)
13. **Arthur Vining Davis Junior Faculty Fellowship**, period: July 1, 1991 - September 30, 1992, awarded on March 14, 1991.
(Awarded by Santa Clara University. One award each year was given to an Assistant Professor on a competitive basis for a research or creative project)
14. **U.S. National Science Foundation (NSF) Research Initiation Award**, performance period: July 1, 1990 – June 30, 1993, awarded on May 25, 1990.
15. **Who's Who Awards:**
 - **Who's Who Among America's Teachers**, included since the 3rd edition, 1994.
(Selected by students of merit for excellence as a distinguished educator in America)
 - **AcademicKey's Who's Who in Engineering Education**, since 2002.
 - **Marquis Who's Who in America**, included since the 57th edition, 2003.
(Selected because of the reference value of outstanding achievements. Fewer than four in 10,000 people are included)
 - **Marquis Who's Who in the World**, included since the 21st edition, 2004.
(Selected because of the reference value of the position of responsibility held or the level of achievement attained)
16. **Memberships in Honor Societies:**
 - Sigma Xi, The Scientific Research Society.
 - Phi Kappa Phi Honor Society.
 - Phi Beta Delta Honor Society for International Scholars.
 - Upsilon Pi Epsilon Honor Society in the Computing Sciences.

17. Graduate Honors (GPA = 4.0 out of 4.0), University of Louisiana at Lafayette (then known as University of Southwestern Louisiana), USA, recognized on March 25, 1986.

Note: For a complete list of research grants received, please see the section on research grants and teaching grants.

(2) OTHER NOTABLES:

- **Guest Professor of Shanghai Jiao Tong University** (the honor of Guest Professor is exclusively offered to the selective globally admired experts after the review of the Academic Committee of the University), May 2006 – present.
- **Technical Program Co-Chair** for 2010 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), Singapore, December 14 - 17, 2010.
- **Technical Program Co-Chair** for 2010 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Kuala Lumpur, Malaysia, December 6 – 9, 2010.
- **Distinguished Invited Lecture Speaker**, invited to speak at the Distinguished Lectures for the 5th IEEE Conference on Industrial Electronics and Applications (ICIEA), Taichung, Taiwan, June 15 – 17, 2010. [Lecture Title: to be given later.]
- **Keynote Speaker**, 2009 Joint Conferences on Pervasive Computing (JCPC), Tamkang, Taiwan, December 3 – 5, 2009. [Keynote Speech Title: “Video Coding Technology and Applications: What Have We Seen? What Will We See?”].
- **Keynote Speaker**, 2008 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Macao, China, November 30 – December 3, 2008. [Keynote Speech Title: “Video Coding – A Look at Future Challenges”].
- **Keynote Speaker**, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008. [Keynote Speech Title: “Future Challenges in Video Coding, with a Special Look at Motion Estimation”].
- **General Co-Chair** for 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
- **Chair** of the IEEE Circuits and Systems Society Technical Committee on Circuits and Systems for Communications, May 2006 – May 2008.
- **Technical Program Co-Chair** for 2007 IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, Louisiana, U.S.A, May 27 – 30, 2007 (ISCAS is the flagship conference of the IEEE Circuits and Systems Society, with more than 2,400 papers submitted and an attendance of about 1,500).
- **Program Co-Chair** for 2007 IEEE Workshop on Signal Processing Systems (SiPS), Shanghai, China, October 17 – 19, 2007.
- **One of the “Best Minds”** met by researchers in the 4th Industrial Technology Research Institute (ITRI) (Taiwan) Elite Researchers Program: “Meet the Best Minds,” May 17, 2005.
- **Speaker and Panelist** of the prestigious U.S. Taiwan High-tech Forum (sponsored by the Silicon Valley Chapter of the North America Taiwanese Engineers’ Association), September 10-11, 2004.
- **Distinguished Visiting Professor** to National Dong Hwa University, Taiwan, program co-sponsored by Taiwan’s Ministry of Education, March 24-30, 2004.
- **Speaker** of the prestigious **Shannon Lecture Series** at Stanford University (sponsored by Santa Clara Valley Chapter of the IEEE Computer Society and the Stanford Student Chapter of the IEEE), March 18, 2004.

- **Associate Editor** (Signal Processing and Multimedia), *IEEE Transactions on Circuits and Systems – I: Fundamental Theory and Applications*, appointed for 2002-2003. This is a prestigious journal in the area of circuits and systems research.
- **Program Chair** for Third International Workshop on Digital and Computational Video (DCV), Clearwater Beach, Florida, USA, November 14-15, 2002.
- **Program Co-Chair** for 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
- **Primary author of a book** (co-authored with M. A. Bayoumi), titled *Specification and Verification of Systolic Arrays*, published by World Scientific Publishing Company Pte. Ltd., Singapore, August 1999.
- Received appreciation plaque for contributing and presenting at the first Singapore MPEG Seminar, Nanyang Technological University, June 10, 1998.
- Invited by Dr. Yuan T. Lee, President of Academia Sinica and a Nobel laureate, to give a seminar at Academia Sinica, the premier research institute in Taiwan. Seminar given in July 1996.
- Conducted more than 80 invited colloquia/seminars in eight different countries (including universities, companies, and research organizations), 1989 – present. For a complete list, please see the section on invited colloquia/seminars.
- **General Chair** for IEEE Hot Chips Symposium VII, a conference with a total attendance of about 1,000, held at Stanford University, Stanford, California, USA, August 13-15, 1995.
- **Chair** of IEEE Computer Society Technical Committee on Microprocessors and Microcomputers, 1993 – 1995.
- Best paper in the Software Design Tools and Techniques Minitrack, Hawaii International Conference on System Sciences, Kauai, Hawaii, USA, January 7 - 10, 1992.
- More than 140 publications in refereed journals, books, and refereed conferences, August 1987 - present.

RESPONSIBILITIES AND MAJOR ACCOMPLISHMENTS AS ASSOCIATE DEAN

- **Overseeing**
 - **Research and Faculty Development** in the School of Engineering, Santa Clara University (2007 – present)
 - **Graduate Studies and Research** in the School of Engineering, Santa Clara University (2002 – 2007)
- The School of Engineering has the following graduate programs:
 - Ph.D., M.S., and Engineer's degrees in Computer Engineering, Electrical Engineering, and Mechanical Engineering
 - M.S. degrees in Software Engineering and Engineering Management
 - M.S. degrees in Applied Mathematics and Civil Engineering
 - Certificate programs in different fields in Computer, Electrical, and Mechanical Engineering
 - Open University
- Led and worked with the Dean, the Assistant Dean, Department Chairs, and the School Graduate Program Leadership Council (GPLC) in academic policy setting related to engineering graduate programs (curriculum improvement, Ph.D. exams/theses/policies, cooperative education, international student course load, open university, and other related matters) and quality of instruction.
 - Spoke at the "Ph.D. Night" event (to about 70 current and potential Ph.D. students), May 20, 2009.
 - Streamlined and strengthened Ph.D. policies related to doctoral committee and duration of study, 2009.
 - Worked with Department Chairs and a consultant to improve the quality of term-lecturers in graduate programs, 2003-04. Produced a "Quality of Term-Lecturers – Guidebook", 2004.
 - Streamlined and strengthened Ph.D. graduation procedure and thesis format, 2003-04.

- Worked with the University International Student Service in establishing academic policy related to international students, 2002-03.
- Planned strategic goals for engineering graduate programs (program's missions, budgeting, enrollment, industrial relations, and other related matters).
 - Led and co-led the effort in Engineering Graduate Program Review and Learning Outcomes, 2005-2008.
 - Worked with the Assistant Dean and the Graduate Services Director to assist the Dean in proposing and projecting enrollment, tuition rate & revenue, and financial aid need for graduate programs, 2003-07.
 - Participated in the academic effort in improving graduate enrollment, 2004-07.
 - Initiated and oversaw the replacement of NACES (National Association for Credential Evaluation) foreign transcript checking process and revised the GRE requirement process for admissions, 2006-07.
- Developed engineering graduate curriculum. Created and offered graduate courses in line with the University's and the program's missions.
 - Offered courses in ethical and societal issues, law and intellectual property issues, as well as multicultural and gender issues, 2002-07.
 - Created a new interdisciplinary Bioinformatics certificate program in the School of Engineering, 2004.
 - Created and started five courses in the new area of Bioinformatics, 2003-04.
- Globalization effort and building University-Industry partnerships for academic cooperation and programs.
 - Initiated the effort to collaborate with Shanghai Jiao Tong University, China. The first memorandum of understanding (MOU) between the two Universities (Santa Clara and Shanghai Jiao Tong) signed in August 2009.
 - Led the effort and worked with Lockheed Martin and the University of Denver on establishing the Santa Clara University – Lockheed Martin Partnership for the company's Engineering Leadership Development Program (ELDP) at Santa Clara University, 2005-07. The first course with a record high enrolment commenced in Spring 2007.
 - Created and implemented a course on "Building Global Teams" to help students understand the global working environment, 2004.
- Oversaw and enhanced faculty research and grant activities. Managed the use of indirect cost fund and student financial aid (jointly with the Dean and the Assistant Dean) to promote scholarship in the school.
 - Served as an Engineering representative to the University Special Taskforce on Patents and Inventions, 2008 – present.
 - Oversaw and reported yearly faculty scholarship accomplishments for the school, 2005 - present.
 - Reviewed and approved external grant proposals from engineering faculty, 2002 - present.
 - Managed (with the Dean and the Assistant Dean) the indirect cost fund and the financial aid fund to help improve scholarship in the school (e.g. research assistants and school faculty grants), 2003 – present.
 - Led the effort in creating, structuring, and proposal selecting for the school's Kuehler Undergraduate Research Program, based on a US\$1 million gift from Kuehler, 2005 – present.
 - Assisted the Dean in evaluating University internal grant proposals submitted by engineering faculty, 2005 - present.
 - Created and led different Engineering Research Task Forces & Committees (members were engineering faculty) (the purposes of this group include review of internal proposals and encourage engineering faculty to reach increased levels of scholarship productivity), 2003 – present.
 - Worked with the Dean and the Provost office on University research policies – including policies related to the hiring of research and teaching assistants/associates, as well as policies related to intellectual property, 2007 – 2008.
 - Strengthened and streamlined external grant proposals submitting procedure (jointly), 2003.
- Oversaw faculty development for the school.
 - Served as Engineering representative to the University Faculty Development Advisory Council, 2007 – present.
 - Led the effort in structuring the school's Best Practices for the Support of Tenured Associate Professors for Promotion to Full Professors, 2006-07.
 - Led the effort in structuring the school's Best Practices for the Support of Engineering Faculty Seeking Tenure, 2005 – 2006.
 - Formed mentorship team for new engineering faculty members, 2005.
- Leadership and organization in the School of Engineering.

- Acting Dean, School of Engineering, during various short periods in 2004 – 2006.
- Worked with the Dean and the other two Associate Deans to redefine the duties of each Associate Dean, May – June 2003.
- Worked with and/or assisted the Engineering Graduate Services Office.
 - Worked with the Engineering Graduate Services Office on events such as open houses, student orientations, and presentations at companies, 2002 – 2007.
 - Worked with the Engineering Graduate Services Office on activities such as enrolment improvement, surveys, and bulletin revisions, 2002 – 2007.
 - Worked with the Assistant Dean and others on Graduate Services Office hiring, 2004 – 2007.
 - Oversaw the administration of engineering graduate services (budgeting, marketing, admission, registration, graduation, course scheduling, term faculty hiring, and other related matters), 2002-04.
 - Completed the search process and hired the Director of Graduate Programs, May – July 2002.
 - Managed the Director of Graduate Programs, who was responsible for managing the staff of the Engineering Graduate Office, 2002-04.
 - Worked with Director of Graduate Programs to reorganize the Graduate Office and hire two staff members, 2003.
- Non-technical publications.
 - Nam Ling, “The Mentoring Program in Engineering,” published in *The Teaching Scholar* (The Newsletter of the Faculty Development Program), Santa Clara University, Volume 7, Issue 1, Fall 2007.
- Other experiences and contributions.
 - Oversaw and led the selection process for the following graduate student scholarships: (a) David and Lucile Packard Foundation Fellowship, and (b) Edward M. Fellows Foundation Scholarship, 2007 – present.
 - Worked with Department Chairs and Assistant Dean on allocating teaching assistantships (TAs), 2008 – present.
 - Provided academic guidance and approvals to graduate students, 2002 – present.
 - Led the selection process for the School’s faculty awards, 2004 – present.
 - Led the effort in re-structuring University Ph.D. conferral procedure at commencements, June 2009.
 - Created and oversaw the selection process for the Graduate Academic Excellence in Engineering Awards for outstanding engineering graduate students, 2006-07.
 - Created Ph.D. recognition text for University graduate commencement ceremonies, May 2006.
 - Oversaw the Dean’s Fellowship program, 2002 – 2005.

RESPONSIBILITIES AS PROFESSOR

- Teaching undergraduate and graduate courses, improving course/lab contents and curricula, as well as advising and supervising students in their study plans, research, and projects.
- Conducting scholarly research, publishing and presenting research results, and acquiring research funds.
- Serving in professional organizations and on university committees, contributing to community service and consulting.

RESEARCH AND TEACHING INTERESTS

General Interests:

- * Video Coding
- * Video Communication
- * Multimedia Data Compression (Video, Image, Audio)
- * Computer Architecture

Special Interests:

- * Bit-rate Reduction Methods for Next Generation Video Coding
- * Motion Estimation
- * Video Rate Control
- * Video Transcoding
- * Video Coding International Standards and Future Directions
- * Video Encoder/Decoder Architecture
- * Face Animation

RESEARCH PUBLICATIONS

More than 140 publications (books, book chapters, refereed journals, and refereed conferences):

(1) BOOKS:

1. Nam Ling and M. A. Bayoumi, *Specification and Verification of Systolic Arrays*, published by World Scientific Publishing Company Pte. Ltd., Singapore, 1999.

(2) KEYNOTE PAPERS/ABSTRACTS FOR KEYNOTE SPEECHES IN REFEREED CONFERENCES:

2. Nam Ling, "Video Coding Technology and Applications: What Have We Seen? What Will We See?" Keynote Speech presented and published in the *2009 Joint Conferences on Pervasive Computing (JCPC)*, Tamkang, Taiwan, December 3 – 5, 2009.
3. Nam Ling, "Video Coding – A Look at Future Challenges," Keynote Speech presented at the conference and published in *Proceedings of the 2008 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS)*, Macao, China, November 30 – December 3, 2008.
4. Nam Ling, "Future Challenges in Video Coding, with a Special Look at Motion Estimation," Keynote Speech presented and published in *1st International Workshop on Video Coding and Video Processing (VCVP)*, Shenzhen, China, November 26 – 28, 2008.

(3) BOOK CHAPTERS:

5. Nam Ling and M. A. Bayoumi, "From Architecture to Algorithm - A Formal Approach," published as Chapter 10 in *Transformational Approaches to Systolic Design*, G. M. Megson, ed., Chapman & Hall, London, United Kingdom, pp. 242-294, 1994.
6. F. Lin, T. Shih, and Nam Ling, "Axiomatic Approach for Systolic Array Design," published as a chapter in *Lecture Notes in Artificial Intelligence*, Springer-Verlag, March 1992. Also presented in the Logic Programming Conference, July 1991.
7. Nam Ling and M. A. Bayoumi, "Mapping Algorithms onto Multidimensional Systolic Arrays," published as Chapter 10 in *Progress in Computer-Aided VLSI Design, Vol.2: Techniques*, G.W.Zobrist, ed., Ablex Publishing Corporation, Norwood, New Jersey, USA, pp.283-321, 1990.
8. Nam Ling and M. A. Bayoumi, "The Specification and Verification of Systolic Arrays," published as Chapter 40 in *VLSI Signal Processing, III*, R.W.Brodersen and H.S.Moscovitz, ed., IEEE Press, New York City, New York, USA, pp.435-446, 1988. Also presented in the 1988 IEEE Workshop on VLSI Signal Processing, November 1988.

(4) PAPERS IN REFEREED JOURNALS:

9. Maria Pantoja, Nam Ling, Hari Kalva, and Jae-Beom Lee, "An Efficient VC-1 to H.264 IPB-Picture Transcoder with Pixel Domain Processing," submitted to *IEEE Transactions on Circuits and Systems for Video Technology*.
10. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Context Adaptive Lagrange Multiplier (CALM) for Rate-Distortion Optimal Motion Estimation in Video Coding," accepted for *IEEE Transactions on Circuits and Systems for Video Technology*.
11. Maria Pantoja and Nam Ling, "Transcoding with Resolution Conversion Using Super-Resolution and Irregular Sampling," published online (May 2009) and to appear in print in *Journal of Signal Processing Systems for Signal, Image, and Video Technology* (Special Issue on SoC for Multimedia Networking (SiPS 2007)), Springer.
12. Jianpeng Dong and Nam Ling, "A Context-Adaptive Prediction Scheme for Parameter Estimation in H.264/AVC Macroblock Layer Rate Control," published in *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 19, No. 8, pp. 1108 – 1117, August 2009.

13. Fengling Li, Nam Ling, and Xiaokang Yang, "Improved Update Step for Scalable Video Coding in Video Surveillance," published in *Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology* (Special Issue on Audio-Visual Signal Processing for Intelligent Security Systems), Vol. 49, No. 3, pp.425 – 442, December 2007, Springer. [Note: On January 1, 2008, this journal was renamed *Journal of Signal Processing Systems for Signal, Image, and Video Technology*.]
14. Xiaoquan Yi and Nam Ling, "Improved Normalized Partial Distortion Search with Dual-Halfway-Stop for Rapid Block Motion Estimation," published in *IEEE Transactions on Multimedia*, Vol. 9, No. 5, pp. 995 – 1003, August 2007.
15. Fengling Li, Nam Ling, and Stephen A. Chiappari, "On the Coding Efficiency of MCTF Update Steps for Scalable Video Coding," published in *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 17, No. 6, pp. 779-784, June 2007.
16. Xiaokang Yang, Yongmin Tan, and Nam Ling, "Rate Control for H.264 with Two-Step Quantization Parameter Determination but Single-Pass Encoding," published in *EURASIP Journal on Applied Signal Processing* (Special Issue on Advanced Video Technologies and Applications for H.264/AVC and Beyond), Vol. 2006, Article ID 63409, pp. 1-13, 2006.
17. Minqiang Jiang and Nam Ling, "Low-Delay Rate Control for Real-time H.264/AVC Video Coding," published in *IEEE Transactions on Multimedia*, Vol. 8, No. 3, pp. 467 – 477, June 2006.
18. Minqiang Jiang and Nam Ling, "On Lagrange Multiplier and Quantizer Adjustment for H.264 Frame-Layer Video Rate Control," published in *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 16, No. 5, pp. 663 – 669, May 2006.
19. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Bit Rate Distribution for Motion Estimation in H.264 Coding," published in *IEEE Transactions on Consumer Electronics*, Vol. 52, No. 2, pp. 606 – 610, May 2006.
20. Xiaoquan Yi and Nam Ling, "Improved H.264 Rate Control by Enhanced MAD-Based Frame Complexity Prediction," published in *Journal of Visual Communication and Image Representation* (Special Issue on Emerging H.264/AVC Video Coding Standard), Vol. 17, Issue 2, Elsevier Science, pp. 407 - 424, April 2006.
21. Xiaokang Yang and Nam Ling, "Statistical Multiplexing based on MPEG-4 Fine Granularity Scalability Coding," published in *Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology* (Special Issue on Digital and Computational video), Vol. 42, No. 1, Springer, pp. 69 - 77, January 2006.
22. Xiaoquan Yi and Nam Ling, "Joint Bit Allocation Analysis for Video Streaming Over Networks," published in *International Journal of Internet Protocol Technology*, Vol. 1, No. 2, Inderscience Publishers, pp. 125 – 129, 2005.
23. Xiaokang Yang, Ce Zhu, Zheng Guo Li, Xiao Lin, and Nam Ling, "An Unequal Packet Loss Resilience Scheme for Video over the Internet," published in *IEEE Transactions on Multimedia*, Vol. 7, No. 4, pp. 753 – 765, August 2005.
24. Minqiang Jiang and Nam Ling, "On Enhancing H.264/AVC Video Rate Control by PSNR-Based Frame Complexity Estimation," published in *IEEE Transactions on Consumer Electronics*, Vol. 51, No. 1, pp. 281 – 286, February 2005.
25. Minqiang Jiang, Xiaoquan Yi, and Nam Ling, "Quantizer Control for H.264/AVC Streaming Over Networks," published in *Journal of Internet Technology*, Vol. 5, No. 3, pp. 301 – 304, 2004.
26. Gunnar Hovden and Nam Ling, "Optimizing Facial Animation Parameters for MPEG-4," published in *IEEE Transactions on Consumer Electronics*, Vol. 49, No. 4, pp. 1354 – 1359, November 2003.
27. Z. G. Li, C. Zhu, Nam Ling, X. K. Yang, G. N. Feng, S. Wu, and F. Pan, "A Unified Architecture for Real-Time Video-Coding Systems," published in *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 13, No. 6, pp. 472-487, June 2003.

28. X. K. Yang, C. Zhu, Z. G. Li, X. Lin, G. N. Feng, S. Wu, and Nam Ling, "Unequal Loss Protection for Robust Transmission of Motion Compensated Video over the Internet," published in *Signal Processing: Image Communication*, Vol. 18, No. 3, Elsevier Science, pp. 157-167, March 2003.
29. Nam Ling and Nien-Tsu Wang, "A Real-Time Video Decoder for Digital HDTV," published in *Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology* (Special Issue on Signal Processing Systems: Part I), Vol. 33, No. 3, Kluwer Academic Publishers, pp. 295-306, March 2003.
30. Nam Ling and Nien-Tsu Wang, "Real-time Video Decoding Scheme for HDTV Set-Top Boxes," published in *IEEE Transactions on Broadcasting*, Vol. 48, No. 4, pp. 353 – 360, December 2002.
31. Siyan Liu and Nam Ling, "Transporting HDTV Data over IP," published in *Journal of Internet Technology*, Vol. 2, No. 4, pp. 337-341, 2001.
32. N.-T. Wang and Nam Ling, "Architecture for Real-time HDTV Video Decoding," published in *Tamkang Journal of Science and Engineering*, Vol. 2, No. 2, pp. 53-60, November 1999.
33. C.-W. J. Shih, Nam Ling, and T. Ogunfunmi, "Memory Reduction by Haar Wavelet Transform for MPEG Decoder," published in *IEEE Transactions on Consumer Electronics*, Vol. 45, No. 3, pp. 867-873, August 1999.
34. J.-H. Li and Nam Ling, "Architecture and Bus Arbitration Schemes for MPEG-2 Video Decoder," published in *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 9, No. 5, pp. 727-736, August 1999.
35. Nam Ling, N.-T. Wang, and D.-J. Ho, "An Efficient Controller Scheme for MPEG-2 Video Decoder," published in *IEEE Transactions on Consumer Electronics*, Vol. 44, No. 2, pp. 451-458, May 1998.
36. J.-H. Li and Nam Ling, "A Novel VQ Codebook Design Technique," published in *IEEE Transactions on Consumer Electronics*, Vol. 43, No. 4, pp. 1206-1212, November 1997.
37. Nam Ling and J.-H. Li, "A Bus-Monitoring Model for MPEG Video Decoder Design," published in *IEEE Transactions on Consumer Electronics*, Vol. 43, No. 3, pp. 526-530, August 1997.
38. Nam Ling, "A Special Purpose Formal Verifier for Systolic Designs in DSP Applications," published in *Journal of VLSI Signal Processing*, Vol. 11, Nos. 1/2, Kluwer Academic Publishers, pp. 169-187, October/November 1995.
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144. Nam Ling and M. A. Bayoumi, "An Algorithm Transformation Technique for Multi-Dimensional DSP Systolic Arrays," presented and published in *Proceedings of the 1988 IEEE International Symposium on Circuits and Systems (ISCAS)*, Espoo, Finland, pp. 2275-2278, June 7-9, 1988.
145. Nam Ling and M. A. Bayoumi, "A Testable NORA CMOS Serial-Parallel Multiplier," presented and published in *Proceedings of the 1988 IEEE International Symposium on Circuits and Systems (ISCAS)*, Espoo, Finland, pp. 251-254, June 7-9, 1988.
146. Nam Ling and M. A. Bayoumi, "Multi-Dimensional Systolic Networks for DSP Algorithms," presented and published in *Proceedings of the 1988 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, New York City, New York, USA, pp. 1922-1925, April 11-14, 1988.
147. Nam Ling, M. A. Bayoumi, and K. S. Reddy, "VLSI Array Implementation of Modified Booth Algorithm," presented and published in *Proceedings of the 1987 South Central Regional ACM Conference*, Lafayette, Louisiana, USA, pp. 205-221, November 19-21, 1987.
148. Nam Ling and M. A. Bayoumi, "A New Testable CMOS Multiplier," presented and published in *Proceedings of the 30th Midwest Symposium on Circuits and Systems*, Syracuse, New York, USA, pp. 536-539, August 17-18, 1987.

(6) TECHNICAL PROJECT REPORTS:

Technical project reports produced for projects funded by research grants.

CONTRIBUTIONS TO INTERNATIONAL STANDARDS

1. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Context Adaptive Lagrange Multiplier (CALM) for Motion Estimation in JM – Improvement," JVT-T046, adopted at the *20th Meeting of Joint Video Team (JVT) of ISO/IEC MPEG & ITU-T VCEG*, Klagenfurt, Austria, July 17 – 21, 2006.
(The method was adopted into the H.264/MPEG-4 AVC video coding international standard – including the text document and the *H.264/AVC reference software JM 12.0* onwards. Our method further improves the rate-distortion performance for fast motion estimation).
2. Xiaoquan Yi, Jun Zhang, Nam Ling, and Weijia Shang, "Improved and simplified fast motion estimation for JM," JVT-P021, adopted at the *16th Meeting of Joint Video Team (JVT) of ISO/IEC MPEG & ITU-T VCEG*, Poznan, Poland, July 24-29, 2005.
(The method was adopted into the H.264/MPEG-4 AVC video coding international standard – including the *Text Description of Joint Model Reference Encoding Methods and Decoding Concealment Methods* and the *H.264/AVC reference software JM 10.0* onwards. Ours is one of the very few fast motion estimation methods currently exist in the H.264 reference software).

MEMORANDA OF UNDERSTANDING (MOU)

1. Spearheaded the process that led to the signing of memorandum of understanding between Santa Clara University (U.S.A) and Shanghai Jiao Tong University (China), August 31, 2009.
2. Spearheaded the process that led to the signing of memorandum of understanding on R & D collaboration (MPEG and DTV technologies) between School of Engineering (Santa Clara University, U.S.A.) and the Center for Signal Processing (Nanyang Technological University, Singapore), Singapore, April 24, 2000.

RESEARCH GRANTS AND TEACHING GRANTS

(1) RESEARCH GRANTS:

1. Nam Ling, "Next Generation Video Coding," awarded **Santa Clara University School of Engineering Research Grant**, US\$10,371, performance period: January – December 2010.
2. Nam Ling, "Predictive and Decoder-Derived Video Coding Model," awarded **Huawei Technologies grant**, US\$70,000, performance period: July 1, 2009 – June 30, 2010.
3. Nam Ling, "A Statistical Motion Vector Coding Model," awarded **Huawei Technologies grant**, US\$70,000, performance period: August 16, 2007 – March 15, 2010.
4. Nam Ling, "H.264 Video Post-Processing and Artifacts Reduction," awarded **Santa Clara University School of Engineering Research Grant**, US\$15,504, performance period: September 5, 2006 – December 31, 2009.
5. Nam Ling, "Streaming MPEG-4 FGS Video over the Internet," awarded **Santa Clara University School of Engineering Research Grant**, US\$12,000, performance period: June 19, 2002 – June 18, 2003.
6. Nam Ling, "VLSI Design of an MPEG-2 Decoder," awarded **Santa Clara University School of Engineering Internal Grant**, US\$10,803, performance period: June 19, 2000 – June 18, 2001.
7. Nam Ling, awarded **Broadband Networks Corporation research donation**, US\$55,092 (in new equipment), for research in areas of MPEG and DTV technology, networked video, and interactive multimedia, performance period: starting May 25, 2000.

8. Nam Ling (Primary PI) and Hans-Peter Dommel (Co-PI), "Transmission of HDTV Streams over IP Networks," awarded **Research grant from Nortel Networks**, US\$20,000, performance period: February 1, 2000 – November 1, 2000.
9. Nam Ling, "Memory Subsystem for HDTV Decoding," awarded **NJR Corporation (New Japan Radio) grant for joint research**, US\$55,200, performance period: August 1, 1997 – February 1, 1999.
10. Nam Ling, "MPEG-2 and MPEG-4 Video," awarded **Medianix Semiconductor, Inc. grant for joint research**, US\$50,000, performance period: July 1, 1997 – June 30, 1998.
11. Nam Ling, "MPEG Video Compression," awarded **NJR Corporation (New Japan Radio) grant for joint research**, US\$56,700 (US\$20,000 received in October 1995, US\$36,700 received in April 1996), performance period: October 1, 1995 - March 31, 1997.
12. Nam Ling, "An Application Framework for Distributed Computing Environment," awarded **IBM Research Grant**, US\$5,000, performance period: May 1, 1993 - February 10, 1995.
13. Nam Ling, "A Formal Verifier for Systolic Array Designs," awarded **Arthur Vining Davis Junior Faculty Fellowship**, US\$10,700 (including a funding of US\$3,500 and the release from all other University responsibilities during fall 1991), performance period: July 1, 1991 - September 30, 1992.
14. Nam Ling, "RIA: Formal Specification and Verification of Systolic Arrays," awarded **National Science Foundation (NSF) Research Initiation Award**, Grant No. MIP-9010385, US\$59,938, performance period: July 1, 1990 - June 30, 1993.
15. Nam Ling, "Automatic Formal Verification of Systolic Arrays," awarded **IBM Faculty Research Grant**, US\$3,818, performance period: May 7, 1990 - June 30, 1991.

(2) TEACHING GRANTS:

16. Nam Ling and Weijia Shang, "Video Processing Project for Undergraduates," awarded **Santa Clara University Funds for Technology Innovation**, requested US\$12,810 but final funding amount pending approval, performance period: January – March 2010.
17. Nam Ling and Weijia Shang, "A New Computer Hardware Design Methodology for Undergraduates," awarded **IBM Faculty Teaching Grant**, US\$6,000, performance period: April 19, 1996 – December 31, 1997.

(3) OTHER INFO:

Nominated by Santa Clara University for **National Science Foundation (NSF) Young Investigator (NYI)** award, January 28, 1993.

TEACHING, COURSE DEVELOPMENT, AND RESEARCH ADVISING EXPERIENCE

(1) COURSES TAUGHT:

Different Graduate Level Courses Taught (1990 - present):

1. Multimedia Data Compression I: Image and Video
2. Multimedia Data Compression II: Audio and Speech
3. Advanced Techniques in Video Coding
4. Digital TV
5. Application-Specific Array Processors
6. Parallel Computation Systems I
7. Parallel Computation Systems II
8. Computer Architecture

Different Undergraduate Level Courses Taught (1989 - present):

9. Multimedia Data Compression (Senior Level Current Topics)
10. Computer Architecture (Senior Level)

11. Introduction to Microprocessors (Senior/Junior Level)
12. Digital System Design and Analysis / Logic Design (Junior/Sophomore Level)
13. Machine Organization and Programming (Sophomore Level)
14. Introduction to Digital Hardware (Freshmen/Sophomore Level)

Note: Most of the above courses were taught multiple times. Course materials were revised yearly to include state-of-the-art topics.

Courses Taught Prior to 1989:

- Digital Systems (Junior Level), spring 86
- Computer Engineering (Freshmen Level), spring 86

(2) CURRICULUM AND LABORATORY DEVELOPMENT:

1. Created a new area of specialization (Bioinformatics) and the corresponding graduate courses in the School of Engineering, 2004.
2. Created and developed the Bioinformatics track for track-based M.S. curriculum in Computer Engineering, 2004.
3. Participated as a member of the committee that developed a track-based M.S. curriculum in Computer Engineering; innovated and developed the Multimedia Processing track and the Computer Architecture and Systems track, 2000-01.
4. Jointly developed a hardware description language based design lab for computer architecture course, 1997 – 98.
5. Led a committee that developed the curriculum requirement for Advanced Studies in High-Performance Computing certificate program, 1994 - 95.
6. Jointly developed the new curriculum requirements for M.S. in Computer Engineering, 1993 - 94.
7. Involved in the Computer Engineering undergraduate curriculum revision, 1993 - 94.
8. Involved in the development of Digital Systems Laboratory for undergraduate instruction and in the structuring of undergraduate digital hardware courses and curriculum, 1990 - 2002.

Courses Created, Developed, and Implemented:

9. Advanced Techniques in Video Coding (Graduate Level Course), beginning 2006.
10. Digital TV (Graduate Level Course under Advanced Topics in Computer Engineering), 2000.
11. Multimedia Data Compression II: Audio and Speech (Graduate Level Course), beginning 1996.
12. Multimedia Data Compression I: Image and Video (Graduate Level Course), beginning 1995.
13. Introduction to Digital Hardware (Freshmen/Sophomore Level) course and lab, beginning 1995.
14. Application-Specific Array Processors (Graduate Level Course), beginning 1990.

Laboratory Development:

15. Established and developed the Multimedia Compression Lab., 1997 – present.
16. Jointly developed the High Performance Computing Lab. (also known as Computer Systems and Parallel Processing Research Lab.), 1993 - 1996.

(3) SERVED AS DISSERTATION/THESIS/INDEPENDENT STUDY ADVISORS FOR:

- 18 Ph.D. students, one Engineer's degree student, and more than 65 M.S. students, 1990 – present.
(Also served as advisors for many undergraduate students in their senior design projects, including several teams who won School level awards on best projects.)
- Ph.D. students graduated:
 - Maria Pantoja, dissertation title: "An Efficient IPB-Picture Transcoder with Joint Pixel and Transform Domain Processing," graduated September 2009.
 - Fengling Li, dissertation title: "Improved Motion-Compensated Temporal Filtering (MCTF) for Scalable Video Coding," graduated December 2006.
 - Minqiang Jiang, dissertation title: "Adaptive Rate Control for Advanced Video Coding," graduated March 2006.
 - Xiaoquan Yi, dissertation title: "Simplified and Fast Full-Pel and Sub-Pel Motion Estimation for Video Coding," graduated December 2005.
 - Nien-Tsu Wang, dissertation title: "Processing and Storage Models for MPEG-2 Main Level and High Level Video Decoding – A Block-Level Pipeline Approach," graduated March 2004.
 - Gunnar Hovden, dissertation title: "Generation of Optimized Facial Animation Parameters," graduated December 2003.

PROFESSIONAL ACTIVITIES AND UNIVERSITY COMMITTEES

(1) MAJOR PROFESSIONAL LEADERSHIP POSITIONS:

1. **Technical Program Co-Chair**, 2010 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), Singapore, December 14 – 17, 2010.
2. **Technical Program Co-Chair**, 2010 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Kuala Lumpur, Malaysia, December 6 – 9, 2010.
3. **General Co-Chair**, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
4. **Technical Committee Chair**, IEEE Circuits and Systems Society Circuits and Systems for Communications Technical Committee, May 2006 – May 2008. (Technical Committee Chair-Elect during May 2005 – May 2006).
5. **Technical Program Co-Chair**, 2007 IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, Louisiana, U.S.A, May 27 – 30, 2007. (ISCAS is the flagship conference of the IEEE Circuits and Systems Society, with 1,826 papers submitted and an attendance of about 1,300).
6. **Program Co-Chair**, 2007 IEEE Workshop on Signal Processing Systems (SiPS), Shanghai, China, October 17 – 19, 2007.
7. **Track Co-Chair (Track on Circuits and Systems for Communications), Technical Program Committee**, 2006 IEEE International Symposium on Circuits and Systems (ISCAS), Island of Kos, Greece, May 21 – 24, 2006.
8. **Track Co-Chair (Track on Circuits and Systems for Communications), Technical Program Committee**, 2005 IEEE International Symposium on Circuits and Systems (ISCAS), Kobe, Japan, May 23 – 26, 2005.
9. **Track Co-Chair (Track on Circuits and Systems for Communications), Technical Program Committee**, 2004 IEEE International Symposium on Circuits and Systems (ISCAS), Vancouver, Canada, May 23 - 26, 2004.
10. **Program Chair**, Third International Workshop on Digital and Computational Video (DCV), Clearwater Beach, Florida, USA, November 14-15, 2002.
11. **Program Co-Chair**, 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
12. **General Chair**, IEEE Hot Chips Symposium VII, Stanford University, Stanford, California, USA, August 13-15, 1995.
(Conference with a total attendance of about 1,000 and reported by media such as World Journal, EE Times, and San Jose Mercury News).
13. **Chair**, IEEE Computer Society Technical Committee on Microprocessors and Microcomputers, 1993 - 1995.
14. **Vice Chair**, IEEE Hot Chips Symposium VI, Stanford University, Stanford, California, USA, August 14-16, 1994.

(2) EDITORSHIPS IN MAJOR JOURNALS:

15. **Guest Co-Editor**, Journal of Signal Processing Systems for Signal, Image, and Video Technology (Special Issue on SoC for Multimedia Networking (SiPS 2007)), Springer, online version published in 2009, printed format to appear in 2010.
16. **Editor of the Editorial Board**, Journal of Internet Technology, 2004 – present.
17. **Member of the Editorial Board**, International Journal of Internet Protocol Technology, Inderscience Publishers, 2005 – 2008.

18. **Guest Co-Editor**, Journal of VLSI Signal Processing Systems for Signal, Image, and Video Technology (Special Issue on Digital and Computational video), Vol. 42, No. 1, Springer, January 2006.
19. **Associate Editor** (Signal Processing and Multimedia), IEEE Transactions on Circuits and Systems – I: Fundamental Theory and Applications, January 2002 – December 2003.

(3) DISTINGUISHED LECTURER POSITIONS:

20. **IEEE Distinguished Lecturer** (IEEE Circuits and Systems Society), January 2007 – December 2008.
21. **IEEE Distinguished Lecturer** (IEEE Circuits and Systems Society), January 2002 – December 2003.

(4) POSITIONS IN CONFERENCE STEERING, ORGANIZING, AND PROGRAM COMMITTEES:

22. **Technical Program Committee Member**, 2010 IEEE Workshop on Signal Processing Systems (SiPS), San Francisco Bay Area, California, USA, October 6 – 8, 2010.
23. **Technical Program Committee Member**, 2010 IEEE International Conference on Multimedia and Expo (ICME), Singapore, July 19 – 23, 2010.
24. **Technical Program Committee Member**, SPIE Visual Communications and Image Processing 2010 (VCIP), Huang Shan, China, July 11 – 14, 2010.
25. **International Advisory Committee Member**, The 5th IEEE Conference on Industrial Electronics and Applications (ICIEA), Taichung, Taiwan, June 15 – 17, 2010.
26. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 13, 2010.
27. **Organizing Committee Member (Registration)**, 2009 IEEE International Conference on Image Processing (ICIP), Cairo, Egypt, November 7 – 11, 2009.
28. **Technical Program Committee Member**, 2009 IEEE Workshop on Signal Processing Systems (SiPS), Tampere, Finland, October 7 - 9, 2009.
29. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 10 - 14, 2009.
30. **Steering Committee Member**, IEEE International Symposium on Circuits and Systems (ISCAS), 2008.
31. **Technical Program Committee Member**, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
32. **Technical Program Committee Member**, 2008 IEEE Workshop on Signal Processing Systems (SiPS), Washington, D.C., USA, October 8 - 10, 2008.
33. **Technical Program Committee Member**, IEEE International Conference on Circuits and Systems for Communications (ICCSC), Shanghai, China, May 26 - 28, 2008.
34. **Review Committee Member**, 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
35. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 13, 2008.
36. **Technical Program Committee Member**, Multimedia Compression and Optimization Track, Pacific-Rim Conference on Multimedia (PCM), Hong Kong, China, December 11 – 14, 2007.
37. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 10 - 14, 2007.

38. **Technical Program Committee Member**, 2006 IEEE Workshop on Signal Processing Systems (SiPS), Banff, Alberta, Canada, October 2 – 4, 2006.
39. **Technical Program Committee Member** and **Review Committee Member**, 2006 IEEE International Symposium on Circuits and Systems (ISCAS), Island of Kos, Greece, May 21 – 24, 2006.
40. **Program Committee Member**, Picture Coding Symposium 2006 (PCS), Beijing, China, April 24 – 26, 2006.
41. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
42. **Technical Program Committee Member**, 2005 International Symposium on Intelligent Signal Processing and Communications Systems, Hong Kong, China, December 13 – 16, 2005.
43. **International Program Committee Member**, Fifth International Conference on Information, Communications and Signal Processing, Bangkok, Thailand, December 6 – 9, 2005.
44. **Technical Program Committee Member**, 2005 IEEE Workshop on Signal Processing Systems (SiPS), Athens, Greece, November 2 – 4, 2005.
45. **Technical Program Committee Member** and **Review Committee Member**, 2005 IEEE International Symposium on Circuits and Systems (ISCAS), Kobe, Japan, May 23 - 26, 2005.
46. **Technical Program Committee Member**, 2004 IEEE Workshop on Signal Processing Systems (SiPS), Austin, Texas, U.S.A, October 13 – 15, 2004.
47. **Technical Program Committee Member** and **Review Committee Member**, 2004 IEEE International Symposium on Circuits and Systems (ISCAS), Vancouver, Canada, May 23 - 26, 2004.
48. **Program Committee Member**, 2003 IEEE Workshop on Signal Processing Systems (SiPS), Seoul, Korea, August 27 - 29, 2003.
49. **Review Committee Member**, 2003 IEEE International Symposium on Circuits and Systems (ISCAS), Bangkok, Thailand, May 25 - 28, 2003.
50. **Publication Co-Chair**, Workshop and Exhibition on MPEG-4, San Jose, California, USA, June 25 - 27, 2002.
51. **Technical Program Committee Member**, 2002 IEEE International Symposium on Circuits and Systems (ISCAS), Scottsdale, Arizona, USA, May 26-29, 2002.
52. **International Program Committee Member**, Third International Conference on Information, Communications and Signal Processing, Singapore, October 15 – 18, 2001.
53. **Program Committee Member**, 2001 IEEE Workshop on Signal Processing Systems (SiPS), Antwerp, Belgium, September 26-28, 2001.
54. **Publication Co-Chair**, Workshop and Exhibition on MPEG-4, San Jose, California, USA, June 18 – 20, 2001.
55. **Technical Program Committee Member**, 2001 IEEE International Symposium on Circuits and Systems (ISCAS), Sydney, Australia, May 6-9, 2001.
56. **Chair, Student Paper Contest Panel**, 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
57. **Technical Program Committee Member**, 2000 IEEE International Symposium on Circuits and Systems (ISCAS), Geneva, Switzerland, May 28-31, 2000.
58. **Technical Program Committee Member**, 1999 IEEE International Symposium on Circuits and Systems (ISCAS), Orlando, Florida, USA, May 30 – June 2, 1999.

59. **Program Committee Member**, 8th Great Lakes Symposium on VLSI, Lafayette, Louisiana, USA, February 19-21, 1998.
60. **Member (at large)**, Organizing Committee, IEEE Hot Chips Symposium IX, Stanford University, Stanford, California, USA, August 24-26, 1997.
61. **Member (at large)**, Organizing Committee, IEEE Hot Chips Symposium VIII, Stanford University, Stanford, California, USA, August 18-20, 1996.
62. **Technical Program Committee Member**, 37th Midwest Symposium on Circuits and Systems, Lafayette, Louisiana, USA, August 3 -5, 1994.
63. **Publication Chair**, IEEE Hot Chips Symposium V, Stanford University, Stanford, California, USA, August 8-10, 1993.
64. **Digest Chair**, IEEE Hot Interconnects Symposium, Stanford University, Stanford, California, USA, August 5-7, 1993.
65. **Publication Chair**, IEEE Hot Chips Symposium IV, Stanford University, Stanford, California, USA, August 9-11, 1992.
66. **Publication Chair**, IEEE Hot Chips Symposium III, Stanford University, Stanford, California, USA, August 26-27, 1991.
67. **Registration Chair**, IEEE Hot Chips Symposium II, Santa Clara University, Santa Clara, California, USA, August 20-21, 1990.

(5) CHAIRMANSHIPS IN CONFERENCE SESSIONS AND ORGANIZERS OF SPECIAL SESSIONS:

68. **Session Co-Chair**, Session on “Visual Signal Coding and Communications,” 2010 IEEE International Symposium on Circuits and Systems (ISCAS), Paris, France, May 30 – June 2, 2010.
69. **Session Chair**, Session on “Transcoding,” 2009 IEEE International Conference on Image Processing (ICIP), Cairo, Egypt, November 7 – 11, 2009.
70. **Session Chair**, Session on “DSP Implementations I,” 2009 IEEE Workshop on Signal Processing Systems (SiPS), Tampere, Finland, October 7 - 9, 2009.
71. **Session Chair**, Session on “Advanced Video Compression & Processing Techniques,” 2008 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Macao, China, November 30 – December 3, 2008.
72. **Keynote Session Chair**, Keynote Speech entitled “Video Compression and the New World of Digital Television,” 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 – 28, 2008.
73. **Session Chair**, All Sessions in Day 2 of the Workshop, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 – 28, 2008.
74. **Session Co-Chair**, Session on “Wireless Communications Systems,” 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
75. **Session Co-Chair**, Session on “Encoder Optimization,” 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
76. **Keynote Session Chair**, Keynote Speech entitled “Wireless Sensors Networks & DSP: Marriage Made in Heaven,” 2007 IEEE Workshop on Signal Processing Systems (SiPS), Shanghai, China, October 17 – 19, 2007.

77. **Keynote Session Chair**, Keynote Speech entitled “Si Technology Roadmap for Ubiquitous Computing, Sensing, and Perception,” 2007 IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, Louisiana, U.S.A., May 27 – 30, 2007.
78. **Session Co-Chair**, Session on “MIMO Systems,” 2007 IEEE International Symposium on Circuits and Systems (ISCAS), New Orleans, Louisiana, U.S.A., May 27 – 30, 2007.
79. **Session Chair**, Session on “Coding and Compression,” 2006 IEEE Workshop on Signal Processing Systems (SiPS), Banff, Alberta, Canada, October 2 – 4, 2006.
80. **Session Co-Chair**, Session on “Motion Estimation II,” 2006 IEEE International Symposium on Circuits and Systems (ISCAS), Island of Kos, Greece, May 21 – 24, 2006.
81. **Session Co-Chair**, Session on “Moving Picture Coding,” Picture Coding Symposium 2006 (PCS), Beijing, China, April 24 – 26, 2006.
82. **Session Chair**, Session on “Mobile Multimedia,” IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
83. **Session Co-Chair**, Session on “H.264 Encoding,” IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
84. **Session Chair**, Session on “Video Coding,” 2005 IEEE Workshop on Signal Processing Systems (SiPS), Athens, Greece, November 2 – 4, 2005.
85. **Session Organizer and Session Chair**, Special Session on “Advances in Scalable Video Coding,” Visual Communications and Image Processing 2005 (VCIP), Beijing, China, July 12 – 15, 2005.
86. **Session Co-Chair**, Session on “Efficient Implementation of AVC/H.264,” 2005 IEEE International Symposium on Circuits and Systems (ISCAS’2005), Kobe, Japan, May 23 - 26, 2005.
87. **Session Co-Chair**, Session on “Communication Circuits & Systems I,” 2005 IEEE International Symposium on Circuits and Systems (ISCAS’2005), Kobe, Japan, May 23 - 26, 2005.
88. **Session Chair**, Session on “JPEG2000 Implementations,” 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Philadelphia, Pennsylvania, USA, March 18 – 23, 2005.
89. **Session Chair**, Session on “Architectures for Source and Channel Coding,” 2004 IEEE Workshop on Signal Processing Systems (SiPS), Austin, Texas, USA, October 13 – 15, 2004.
90. **Session Chair**, Session on “Advanced Video Coding Techniques for HDTV and Video Applications (I),” 2004 IEEE International Conference on Multimedia and Expo (ICME 2004), Taipei, Taiwan, June 27 - 30, 2004.
91. **Session Chair**, Session on “Receivers Architecture and Design,” 2004 IEEE International Symposium on Circuits and Systems (ISCAS’2004), Vancouver, Canada, May 23 - 26, 2004.
92. **Session Co-Chair**, Session on “Image and Video Compression,” 2004 IEEE International Symposium on Circuits and Systems (ISCAS’2004), Vancouver, Canada, May 23 - 26, 2004.
93. **Session Co-Chair**, Session on “3-D and Image Processing,” 2004 IEEE International Symposium on Circuits and Systems (ISCAS’2004), Vancouver, Canada, May 23 - 26, 2004.
94. **Session Chair**, Session on “Video Architectures,” 2003 IEEE Workshop on Signal Processing Systems (SiPS), Seoul, Korea, August 27 - 29, 2003.
95. **Session Chair**, Session on “Video Computation Algorithms,” Third International Workshop on Digital and Computational Video (DCV’2002), Clearwater Beach, Florida, USA, November 14-15, 2002.
96. **Session Chair**, Session on “Video,” Workshop and Exhibition on MPEG-4 (WEMP4’2002), San Jose, California, USA, June 25 - 27, 2002.

- 97. Session Chair**, Session on “Video Segmentation,” 2002 IEEE International Symposium on Circuits and Systems (ISCAS’2002), Scottsdale, Arizona, USA, May 26-29, 2002.
- 98. Session Chair**, Session on “Communication Circuits / Implementation,” 2002 IEEE International Symposium on Circuits and Systems (ISCAS’2002), Scottsdale, Arizona, USA, May 26-29, 2002.
- 99. Session Chair**, Session on “Video Codecs,” 2001 IEEE Workshop on Signal Processing Systems (SiPS), Antwerp, Belgium, September 26-28, 2001.
- 100. Session Chair**, Session on “Decoder Algorithms and Architectures,” 2001 IEEE International Symposium on Circuits and Systems (ISCAS’2001), Sydney, Australia, May 6-9, 2001.
- 101. Session Chair**, Session on “Student Paper Contest,” 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
- 102. Session Chair**, Session on “Communication Systems and Circuits,” 2000 IEEE International Symposium on Circuits and Systems (ISCAS’2000), Geneva, Switzerland, May 28-31, 2000.
- 103. Session Chair**, Session on “VLSI Testing – I,” 1999 IEEE International Symposium on Circuits and Systems (ISCAS’99), Orlando, Florida, USA, May 30 – June 2, 1999.
- 104. Session Chair**, Session on “Novel and Emerging Circuits,” 8th Great Lakes Symposium on VLSI, Lafayette, Louisiana, USA, February 19-21, 1998.
- 105. Session Organizer and Session Chair**, Special Session on “Multimedia Architectures,” 37th Midwest Symposium on Circuits and Systems, Lafayette, Louisiana, USA, August 3 -5, 1994.
- 106. Session Chair**, Session on “VLSI Signal and Image Processing Architectures,” 1993 IEEE International Symposium on Circuits and Systems (ISCAS’93), Chicago, Illinois, USA, May 3-6, 1993.
- 107. Session Chair**, Session on “VLSI Design and Applications I,” 1992 IEEE International Symposium on Circuits and Systems (ISCAS’92), San Diego, California, USA, May 10-13, 1992.
- 108. Session Chair**, Session on “VLSI Design and Circuit Layout,” 1990 IEEE International Symposium on Circuits and Systems (ISCAS’90), New Orleans, Louisiana, USA, May 1-3, 1990.

(6) COMMITTEE MEMBERSHIP POSITIONS IN SOCIETY TECHNICAL COMMITTEES:

- 109. Committee Member**, IEEE Circuits and Systems Society Multimedia Systems and Applications Technical Committee, May 2008 – present.
- 110. Committee Member**, IEEE Circuits and Systems Society Circuits and Systems for Communications Technical Committee, May 2004 – present.
- 111. Committee Member**, IEEE Signal Processing Society Design and Implementation of Signal Processing Systems Technical Committee, December 2003 – present.
- 112. Committee Member**, IEEE Circuits and Systems Society Technical Committee on Visual Signal Processing and Communications, 1999 – present.
- 113. Committee Member**, IEEE Computer Society Technical Committee on Microprocessors and Microcomputers, 1992 - 1997.
- 114. Committee Member**, IEEE Circuits and Systems Society VLSI Systems and Applications Technical Committee, 1990 – 2005.

(7) OTHER PROFESSIONAL SERVICE (AND SOME COMMUNITY SERVICE):

- 115.Member**, Integrated Undergraduate Engineering Advisory Committee, University of Hawaii at Hilo, Hilo, Hawaii, USA, September 2009 – present.
- 116.External Referee** (evaluating faculty promotion), Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, USA, 2009.
- 117.Judge**, The 15th Annual Outstanding Chinese Media Awards, North California Chinese Media Association (NCCMA), California, USA, 2009.
- 118.External Examiner**, Department of Computer Science & Engineering, the Hong Kong University of Science and Technology, Hong Kong, China, 2009.
- 119.External Referee** (assessing faculty tenure), School of EEE, Nanyang Technological University, Singapore, 2008.
- 120.External Assessor** (assessing faculty tenure), School of EEE, Nanyang Technological University, Singapore, 2007.
- 121.Member**, Board of Directors, Chinese Institute of Engineers (San Francisco Bay Area Chapter), USA, February 2004 – March 2006.
- 122.**Contributed to the 4th Industrial Technology Research Institute (ITRI) (Taiwan) Elite Researchers Program: “Meet the Best Minds,” May 2005.
- 123.External Examiner** (for graduate student theses and dissertations), School of EEE, Nanyang Technological University, Singapore, 2000 – 2001, 2004 - 2005.
- 124.External Examiner** (for graduate student theses and dissertations), Faculty of Engineering, Multimedia University, Malaysia, 2002 – 2003.
- 125.Member**, Singapore Digital TV Technical Committee, Singapore, March 1998 – August 1998.
- 126.Member**, Board of Advisors, International Technological University, Santa Clara, California, USA, August 1997 – present.
- 127.Reviewers for proposals**
- Singapore Ministry of Education (MOE) Academic Research Fund (2008)
 - Board of Regents (State of Louisiana, U.S.) Support Fund R & D Program (2003)
 - King Fahd University of Petroleum and Minerals (Saudi Arabia) (1998)
 - National Science Foundation (U.S.) (1991)
- 128.Reviewers for journals**
- IET Image Processing (2009)
 - Signal Processing: Image Communication (Elsevier Science) (2006)
 - IEE Proceedings Vision, Image & Signal Processing (2005)
 - Journal of Visual Communication and Image Representation (Elsevier Science) (2005)
 - Computers & Electrical Engineering: An International Journal (2005)
 - IEEE Transactions on Circuits and Systems – I: Fundamental Theory and Applications (2002, 2003, 2004)
 - ETRI (Electronics and Telecommunications Research Institute, Korea) Journal (2003)
 - EURASIP Journal of Applied Signal Processing (2002, 2006, 2007)
 - IEEE Transactions on Circuits and Systems for Video Technology (2002, 2005)
 - IEEE Transactions on Multimedia (2000, 2004)
 - IEEE Transactions on Signal Processing (1998, 2000-01)
 - IEEE Micro Magazine (1995)
 - Journal of VLSI Signal Processing Systems (1993, 2001, 2003)
 - IEEE Computer Magazine (1991, 1992, 1993)
 - Journal of Circuits, Systems and Computers (1992)
 - Electronics Letters (1991)
- and more.
- 129.Reviewers for conferences**

- IEEE International Conference on Image Processing (2009)
 - IEEE International Conference on Multimedia and Expo (2010)
 - Picture Coding Symposium (PCS) (2006)
 - Visual Communications and Image Processing (VCIP) (2005, 2010)
 - IEEE International Conference on Consumer Electronics (2006, 2010)
 - IEEE Workshop on Signal Processing Systems (2000, 2001, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010)
 - IEEE International Symposium on Circuits and Systems (1991, 1992, 1993, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2008, 2010)
 - IEEE International Conference on Acoustics, Speech, and Signal Processing (2005, 2006, 2007, 2008, 2009, 2010)
 - Third International Workshop on Digital and Computational Video (2002)
 - IEEE Workshop and Exhibition on MPEG-4 (2001)
 - Third International Conference on Information, Communications and Signal Processing (2001)
 - 3rd International Conference on Computational Intelligence and Multimedia Applications (1999)
 - 8th Great Lakes Symposium on VLSI (1998)
 - 37th Midwest Symposium on Circuits and Systems (1994)
 - 7th International Parallel Processing Symposium (1993)
 - International Conference on Parallel Processing (1989, 1993)
 - International Conference on Parallel and Distributed Systems (1992)
 - IEEE Asia-Pacific Conference on Circuits and Systems (1992)
 - Hawaii International Conference on System Sciences (1992)
- and more.

(8) MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS:

- 130.Fellow**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE) and several IEEE Societies, 2008 – present.
- 131.Senior Member**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE) and several IEEE Societies, 1999 – 2007.
- 132.Member**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE) and several IEEE Societies, 1990 - 1999.
- 133.Professional Member**, American Society for Engineering Education (ASEE), 2002 – 2006.
- 134.Member**, The International Society for Optical Engineering, (SPIE), 2004 – 2005.
- 135.Professional Member**, The Association for Computing Machinery (ACM), 1990 - 2004.

(9) SERVICE IN UNIVERSITY COMMITTEES:

- 136.Chair**, Search Committee for Academic Year Lecturer in Computer Engineering, Department of Computer Engineering, Santa Clara University, 2009.
- 137.Member**, Special Taskforce on Patents and Inventions, Santa Clara University, 2008 – present.
- 138.Member**, Faculty Development Advisory Council, Santa Clara University, 2007 – present.
- 139.Member**, Graduate Program Leadership Council, School of Engineering, Santa Clara University, 2007 – present.
- 140.Member**, Steering Committee, Center for Nanostructure, Santa Clara University, 2003 - 2007.
- 141.Committee Member**, Search Committee for the New Dean of the School of Engineering, Santa Clara University, 2001 – 2002.
- 142.Member**, University Faculty Judicial Board, Santa Clara University, 2000 – 2001, 2006 – 2007.

143. Committee Member, School of Engineering Rank & Tenure Committee, Santa Clara University, 1996 – 1999, 2001 – 2002.

144. Committee Member, School of Engineering Dean's Evaluation Committee, Santa Clara University, 1999.

145. Committee Member, University Research Committee, Santa Clara University, 1994 – 1996, 2001 – 2004.

146. Committee Member, University Academic Integrity Committee, Santa Clara University, 1992 - 1994.

147. Committee Member, University Teaching and Learning Committee, Santa Clara University, 1990 - 1992.

148. Advisor and co-founder, Upsilon Pi Epsilon (Computing Sciences Honor Society) Santa Clara University Chapter, Chapter started 1990, served as advisor in 1990 - 1993.

Also served in several college and departmental level committees not listed here.

VISITING AND CONSULTING POSITIONS

1. Consulting Professor, NUS College in Silicon Valley (NCSV), National University of Singapore (NUS). Provided advice to NCSV, facilitated entrepreneurship education, advised and assessed NUS interns in Silicon Valley, September 1, 2002 – present.
2. Guest Professor of Shanghai Jiao Tong University (the honor of Guest Professor is exclusively offered to the selective globally admired experts after the review of the Academic Committee of the University), China, May 2006 – present.
3. Consulting at Xilinx, San Jose, California, USA. Provided training on video technology for engineers, September 2009.
4. Visiting Researcher, Institute for Infocomm Research (I²R), Singapore. Reviewed research activities, discussed collaborations, and delivered a seminar, January 21 – 25, 2008.
5. Invited Speaker / Visitor, Lee Center for Networking Research, Center for Telecommunications Research, and Dept. of Electronics Engineering, National Chiao Tung University, Taiwan, November 19 – 25, 2006. (Invited through sponsorship by Taiwan National Science Council and Lee Center, delivered nine talks at four major universities in Taiwan.)
6. Visiting Consultant, Center for Signal Processing, Nanyang Technological University, Singapore. Worked in the areas of scalable video coding and distributed video coding, June 27 – July 6 and July 17 – 26, 2005.
7. Visiting Scientist / Consultant, Institute for Infocomm Research, Singapore. Worked in the area of scalable video coding and gave seminars, February 3 – March 2, 2005.
8. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “Video & Image Compression: Principles & Standards (including MPEG-4 AVC / H.264)” for professionals from multi-national companies, government organizations, University, and research centers, July 12 - 15, 2004.
9. Special Invited Speaker / Distinguished Visiting Professor, Dept. of Electrical Engineering, National Dong Hwa University, Hualien, Taiwan, March 24 – 30, 2004. (Invited through a program sponsored by Taiwan Ministry of Education.)
10. Visiting Scientist / Consultant, Institute for Infocomm Research, Singapore. Invited to give two presentations and to discuss collaborative work on multimedia signal processing, February 16 – 21, 2004.
11. Visiting Professor, Laboratories for Information Technology (now known as Institute for Infocomm Research), Singapore. Performed research & development on adaptive network environment for streaming of video, August 1 -31, 2002.

12. Consulting at Laboratories for Information Technology (now known as Institute for Infocomm Research), Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, March 25 - 28, 2002.
13. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, November 19 - 23, 2001.
14. Visiting Consultant, Center for Signal Processing, Nanyang Technological University, Singapore. Led a team of 5 research fellows and research engineers to work on a streaming video over IP project, July – September, 2001.
15. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, February 19 - 23, 2001.
16. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, November 20 - 24, 2000.
17. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, February 28 – March 1, 2000.
18. Visiting Consultant, Center for Signal Processing, Nanyang Technological University, Singapore. Led a team of 9 research fellows and research engineers to work on a digital TV project, July – September, 1999.
19. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on “MPEG & DTV” for professionals from multi-national companies, government organizations, University, and research centers, August 1999.
20. Consulting at Center for Signal Processing, Nanyang Technological University, Singapore. Taught a short course on MPEG video coding for professionals from multi-national companies, government organizations, University, and research centers, July 1998.
21. Consulting at Philips Semiconductors, Sunnyvale, California, USA. Provided MPEG compression training for engineers, 1995.
22. Consulting at LSI Logic Corporation, Milpitas, California, USA. Provided image and video compression training for digital video products engineers, 1994.

INVITED COLLOQUIA/SEMINARS, KEYNOTE/DISTINGUISHED LECTURES, AND PANELS

(1) Keynote Speeches and Key Panels

1. **Keynote Speaker**, Keynote Speech: “Video Coding Technology and Applications: What Have We Seen? What Will We See?” 2009 Joint Conferences on Pervasive Computing (JCPC), Tamkang, Taiwan, December 3 – 5, 2009.
2. **Keynote Speaker**, Keynote Speech: “Video Coding – A Look at Future Challenges,” 2008 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Macao, China, November 30 – December 3, 2008.
3. **Keynote Speaker**, Keynote Speech: “Future Challenges in Video Coding, with a Special Look at Motion Estimation,” 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
4. **Panelist**, Panel on “futuretech,” and **Speaker**, “Video Coding Technology for Interactive Digital Media – A Vision,” The NTU International Workshop on Interactive Digital Media Research, Singapore, April 28-30, 2008. (Invited by Provost of Nanyang Technological University (NTU), Singapore. This is the inaugural workshop for the NTU Institute for Media Innovation and is of national significance to Singapore.)
5. **Panelist**, Panel on “Technology Trends, New Applications, and Business Opportunities in New Digital Home,” U.S. Taiwan High-tech Forum (UTHF), Santa Clara, California, U.S.A, September 11, 2004. **Speaker**,

“Technology Trend on Video Coding and Streaming and its Application in Industry,” UTHF Pre-Conference Workshop, Saratoga, California, U.S.A, September 10, 2004.
(Invited by the North America Taiwanese Engineers’ Association.)

(2) IEEE Distinguished Lectures (Delivered as IEEE Distinguished Lecturer)

Lecture Title for 2007-2008 IEEE Distinguished Lectures (Circuits and Systems) – “Simplified Fast Motion Estimation: Simplified and Unified Multi-Hexagon Search (SUMH) with Context Adaptive Lagrange Multiplier (CALM).”

Lecture Title for 2002-2003 IEEE Distinguished Lectures (Circuits and Systems) – Lecture 1: “A Real-time MPEG-4 Binary Shape Decoder.” Lecture 2: “A Real-time Video Decoder for Digital HDTV.”

6. COPPE (Electrical Engineering), Federal University of Rio de Janeiro (UFRJ), Rio de Janeiro, Brazil, September 12, 2008.
(Invited by the IEEE Circuits and Systems (CAS) Society Rio de Janeiro Chapter.)
7. Faculty of Engineering, Universiti Putra Malaysia (UPM), Serdang, Malaysia, July 22, 2008.
(Invited by IEEE CAS Society Malaysia Chapter.)
8. Institute for Infocomm Research, Singapore, July 4, 2008.
(Invited by IEEE CAS Society Singapore Chapter.)
9. Electrical Engineering Department, Indian Institute of Technology (IIT), New Delhi, India, November 23, 2007.
(Invited by IEEE CAS Society Delhi Chapter.)
10. School of Electrical & Electronic Engineering, Nanyang Technological University, Singapore, November 19, 2007.
(Invited by IEEE CAS Society Singapore Chapter.)
11. Simon Fraser University, Burnaby (Vancouver area), Canada, June 21, 2007.
(Invited by IEEE CAS Society Joint Chapter of the Vancouver/Victoria Sections.)
12. School of Computer Science and Technology, Huazhong University of Science and Technology, Wuhan, China, November 26, 2003. (2 talks).
(Invited by the school and the IEEE CAS Society Beijing Chapter.)
13. Beijing Broadcasting Institute (now known as Communication University of China), Beijing, China, November 24, 2003.
(Invited by the institute and the IEEE CAS Society Beijing Chapter.)
14. National Laboratory on Machine Perception, Beijing University (called Peking University in China), Beijing, China, November 24, 2003.
(Invited by the lab and the IEEE CAS Society Beijing Chapter.)
15. Division of Engineering, Brown University, Providence, Rhode Island, USA, August 19, 2003.
(Invited by the University and the IEEE Providence Section.)
16. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, August 13, 2002.
(Invited by IEEE CAS Society (Singapore Chapter) and the department.)
17. Ajou University, Seoul, South Korea, April 22, 2002. (2 talks).
(Invited by IEEE Seoul Section CAS Chapter and the University.)

(3) Non-Technical Colloquia/Seminars and Panels

18. **Alumni Speaker**, Celebration - the Golden Jubilee (50th) Anniversary of Computing at the University of Louisiana at Lafayette and the Silver Jubilee (25th) Anniversary of the Center for Advanced Computer Studies, the University of Louisiana at Lafayette, USA, October 30 – 31, 2009.
(Invited by the Center for Advanced Computer Studies, the University of Louisiana at Lafayette.)
19. **Panelist**, Panel on “Managing Projects Across International Boundaries,” 2009 IEEE International Symposium on Circuits and Systems (ISCAS) Graduates of the Last Decade (GOLD) / Technology Management Joint-Session, May 25, 2009.
(Invited by IEEE Circuits and Systems Society GOLD.)
20. **Speaker**, “Managing U.S.-China and University-Industry Joint Projects – A Share of Experience,” 2009 IEEE International Symposium on Circuits and Systems (ISCAS) Graduates of the Last Decade (GOLD) / Technology Management Joint-Session, May 25, 2009.
(Invited by IEEE Circuits and Systems Society GOLD.)
21. **Speaker**, ““Work Smarter! Not Harder!” - How to be “Successful” in Your Engineering Research Career?” Institute for Infocomm Research, Singapore, July 4, 2008.

- (Invited by IEEE WIE (Women in Engineering) Singapore Affinity Group, IEEE Circuits and Systems Society Singapore Chapter, and Institute for Infocomm Research, Singapore.)
22. **Panelist**, Panel on “Fifty Ways to Promote Scholarship,” SCU Research Colloquium, Santa Clara University, Santa Clara, California, USA, February 28, 2006.
(Invited by Associate Provost for Faculty Development, Santa Clara University, USA.)
 23. **Panelist & Facilitator**, Panel & Discussion on “Preparing Your Petition for Tenure and Promotion,” Teaching-Scholar Symposium, Santa Clara University, Santa Clara, California, USA, February 5, 2004.
(Invited by Associate Provost for Faculty Development, Santa Clara University, USA.)
 24. **Panelist/Speaker**, “What do Journal Editors Really Want?” Teaching-Scholar Symposium, Santa Clara University, Santa Clara, California, USA, October 28, 2003.
(Invited by Associate Provost for Faculty Development, Santa Clara University, USA.)
 25. **Speaker**, “Enhancing Scholarly Productivity at SCU – Collaborative Research,” Teaching-Scholar Symposium, Santa Clara University, Santa Clara, California, USA, May 1, 2002.
(Invited by SCU Research Committee and the Faculty Development Program, Santa Clara University, USA.)
 26. **Speaker**, “Corporate Funding and International Collaborations,” Research Symposium, Santa Clara University, Santa Clara, California, USA, April 25, 2001.
(Invited by SCU Sponsored Projects Office and University Research Committee, Santa Clara University, USA.)

(4) Technical Colloquia/Seminars

27. School of Electrical & Electronic Engineering (EEE), Nanyang Technological University, Singapore, July 11, 2008.
28. National Semiconductor, Santa Clara, California, U.S.A, February 11, 2008.
(Invited by IEEE Signal Processing (SP) Society Santa Clara Valley Chapter and IEEE CAS Society Santa Clara Valley Section, USA.)
29. Institute for Infocomm Research, Singapore, January 24, 2008.
(Invited by Institute for Infocomm Research (Singapore), IEEE CAS Society Singapore Chapter, IEEE Industrial Electronics (IE) Society Singapore Chapter, and IEEE SP Society Singapore Chapter.)
30. Huawei Technologies, Shenzhen, China, October 21, 2007.
31. The Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, Louisiana, USA, December 19, 2006.
32. Institute of Information Systems and Applications, National Tsing Hua University, Taiwan, November 24, 2006.
(Invited through sponsorship by Taiwan National Science Council and Lee Center of NCTU.)
33. Department of Electrical Engineering, National Cheng Kung University, Taiwan, November 23, 2006. (2 talks).
(Invited through sponsorship by Taiwan National Science Council and Lee Center of NCTU.)
34. College of Electrical Engineering and Computer Science, National Taiwan University, Taiwan, November 22, 2006. (2 talks).
(Invited through sponsorship by Taiwan National Science Council and Lee Center of NCTU.)
35. Lee Center for Networking Research, Center for Telecommunications Research, and Department of Electronics Engineering, National Chiao Tung University (NCTU), Taiwan, November 21, 2006. (4 talks).
(Invited through sponsorship by Taiwan National Science Council and Lee Center of NCTU.)
36. Communication University of China, Beijing, China, April 29, 2006.
37. Genesis Microchip Inc., Alviso, California, U.S.A, March 17, 2006.
38. School of Electrical & Electronic Engineering, Nanyang Technological University, Singapore, July 28, 2005. (2 talks).
(Invited by the Division of Information Engineering & the Center for Signal Processing of the University, the IEEE SP Singapore Chapter, and the IEEE CAS Singapore Chapter.)
39. Communication University of China, Beijing, China, July 12, 2005.
40. Institute of Image Communication and Information Processing, Shanghai Jiao Tong University, Shanghai, China, July 7, 2005. (2 talks).
41. Department of Electronics Engineering, National Chiao Tung University, Hsinchu, Taiwan, June 24, 2005. (2 talks).
42. Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan, June 23, 2005. (2 talks).
43. Institute for Infocomm Research, Singapore, February 17 and March 1, 2005. (2 talks).
44. Department of Computer Science and Information Engineering, Tamkang University, Tamsui, Taiwan, March 30, 2004.
45. Department of Electrical Engineering, National Dong Hwa University, Hualien, Taiwan, March 25, 26, and 29, 2004. (3 talks).
(As Distinguished Visiting Professor through a program sponsored by Taiwan Ministry of Education.)
46. Shannon Lecture Series, Stanford University, Stanford, California, U.S.A, March 18, 2004.

(Invited by the Santa Clara Valley Chapter of the IEEE Computer Society and the Stanford Student Chapter of the IEEE to speak at the prestigious Shannon Lecture Series.)

47. Institute for Infocomm Research, Singapore, February 17 and 19, 2004. (2 talks).
48. Inter-University Semiconductor Research Center, Seoul National University, Seoul, South Korea, April 23, 2002.
49. Faculty of Information Technology and Faculty of Engineering, Multimedia University, Cyberjaya, Malaysia, July 30, 2001.
50. The Center for Advanced Computer Studies (CACs) Centennial Computing Workshop, University of Louisiana at Lafayette, Lafayette, Louisiana, USA, November 5-6, 1999.
51. Focus Seminar on DTV, Center for Signal Processing, Nanyang Technological University, Singapore, September 10, 1999.
52. Institute of Microelectronics (IME), Singapore, July 22, 1998.
53. Singapore MPEG Seminar, Singapore, June 10, 1998.
54. Medianix Semiconductor, Inc., Mountain View, California, USA, May 29, 1998.
55. Focus Seminar on DSP Applications in Multimedia Systems, Center for Signal Processing, School of EEE, Nanyang Technological University, Singapore, April 22, 1998.
56. Television Corporation of Singapore (TCS), Singapore, March 12, 1998.
57. NJR Corporation (New Japan Radio), Mountain View, California, USA, July 9, 1997.
58. Institute of Information Science, Academia Sinica, Taipei, Taiwan, July 8, 1996.
(Invited by Dr. Yuan T. Lee, President of Academia Sinica and a Nobel Laureate.)
59. Institute of Electronics, Chinese Academy of Sciences, Beijing, China, June 18, 1996.
(Invited through Beijing Association for Science and Technology Exchanges with Foreign Countries.)
60. Department of Electronic Engineering, Tsinghua University, Beijing, China, June 17, 1996.
(Invited through Beijing Association for Science and Technology Exchanges with Foreign Countries.)
61. NJR Corporation (New Japan Radio), Mountain View, California, USA, December 18, 1995.
62. Philips Semiconductors, Sunnyvale, California, USA, February 28, 1995.
63. LSI Logic Corporation, Milpitas, California, USA, June 24, 1994.
64. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, May 2, 1994.
65. Hewlett-Packard Laboratories, Hewlett-Packard Company, Palo Alto, California, USA, September 17, 1993.
66. ASPEC Technology, Inc., Santa Clara, California, USA, April 5, 1993 and May 18, 1993.
67. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, October 19, 1992.
68. Faculty Research Seminar, Department of Electrical Engineering and Department of Computer Engineering, Santa Clara University, Santa Clara, California, USA, April 30, 1992.
69. Workshop on VLSI Research and Education, The Center for Advanced Computer Studies, University of Southwestern Louisiana, Lafayette, Louisiana, USA, April 9-10, 1992.
70. 15th Annual Meeting of the SIAM Southeastern Atlantic Section, Western Carolina University, Cullowhee, North Carolina, USA, April 12-13, 1991.
71. The Parallel Processing Connection, Sunnyvale (presentation held at Redwood City), California, USA, January 14, 1991.
72. Department of Electrical Engineering, the University of Rhode Island, Kingston, Rhode Island, USA, October 15, 1990.
73. Department of Electrical Engineering and Computer Science, Santa Clara University, Santa Clara, California, USA, February 1, 1990.
74. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, November 8, 1989.
75. Department of Computer Science, University of Georgia, Athens, Georgia, USA, July 6-7, 1989.
76. IBM General Technology Division, Hopewell Junction, New York, USA, June 12, 1989.
77. Philips Laboratories, North American Philips Corporation, Briarcliff Manor, New York, USA, May 24, 1989.
78. Department of Electrical and Computer Engineering, Louisiana State University, Baton Rouge, Louisiana, USA, April 11, 1989.

PROFESSIONAL APPEARANCES ON NATIONAL/STATE/LOCAL/FOREIGN MEDIA

Interviewed and reported by:

1. *World Journal* (September 24, 2009) (largest nation-wide Chinese newspaper in the U.S.).
Content: The signing of memorandum of understanding (MOU) between Santa Clara University (USA) and Shanghai Jiao Tong University (China) as well as Ling's work that led to the MOU.

2. *World Journal* (January 9, 2009) (largest nation-wide Chinese newspaper in the U.S.).
Content: Ling's vision on future of video compression and his recent keynote speeches in Asia.
3. *World Journal* (December 29, 2007).
Content: New U.S. Bay Area Chinese IEEE Fellows – Ling was one of the three featured.
4. *World Journal* (December 29, 2007).
Content: Ling became IEEE Fellow as well as Ling's scholarly and professional accomplishments.
5. *World Journal* (December 29, 2007).
Content: Ling's family was featured as a family with excellence in their accomplishments.
6. *World Journal* (October 5, 2007).
Content: Ling received Santa Clara University Award for Sustained Excellence in Scholarship as well as Ling's contributions in digital coding.
7. *World Journal* (December 27, 2006).
Content: Video coding technology in Far East Asia and Ling's Taiwan speaking trip.
8. *World Journal* (December 31, 2005).
Content: Technology review for 2005 and prospect for 2006. Ling was invited and contributed as one of the four panelists. The article spans a full newspaper page.
9. *World Journal* (October 12, 2005).
Content: Ling received Santa Clara University President's Recognition Award.
10. *World Journal* (September 13, 2005).
Content: Fast motion estimation method proposed by Ling's team was adopted into the H.264/MPEG-4 AVC video coding international standard.
11. *World Journal* (May 27, 2005).
Content: Taiwan's Industrial Technology Research Institute (ITRI) Elite Researchers Program: "Meet the Best Minds." Ling was one of the "best minds" they met.
12. *World Journal* (February 11, 2005).
Content: Ling and his student received IEEE ICCE Best Paper Award as well as their related research.
13. *San Jose Mercury News* (September 10, 2004) (largest English newspaper in San Jose and South Bay Area, U.S.).
Content: U.S. Taiwan High-tech Forum. Ling was a speaker.
14. *World Journal* (September 1, 2004).
Content: Ling's work and discussion on scalable video coding and its applications.
15. *World Journal* (August 26, 2004).
Content: Ling's work on connecting Santa Clara University School of Engineering with Asia.
16. *World Journal* (August 20 & September 7 - 10, 2004).
Content: U.S. Taiwan High-tech Forum. Ling was a speaker.
17. *World Journal* (January 15, 2004).
Content: Academic exchange between America and Asia. Ling's recent visits to Asia.
18. *World Journal* (December 10, 2003).
Content: Further discussions on Santa Clara University (U.S.) – Feng Chia University (Taiwan) collaboration.
19. *Sing Tao Daily* (October 29, 2003) (Hong Kong based Chinese newspaper, U.S. version).
Content: Ling's comment on the impact of U.S. H1-B visa reduction.
20. *World Journal* (October 3, 2003).

Content: Ling's comment on Singapore interns in Silicon Valley (article also appeared on the National University of Singapore web site).

21. *World Journal* (August 9, 2003).
Content: Ling received Santa Clara University Award for Recent Achievement in Scholarship as well as Ling's research and accomplishments in video coding and streaming technology.
22. *Sing Tao Daily* (August 9, 2003).
Content: Ling's comment on Santa Clara University's interest in reaching out to Asia.
23. *World Journal* (August 8, 2003).
Content: Discussions on Santa Clara University (U.S.) – Feng Chia University (Taiwan) collaboration.
24. *Sing Tao Daily* (May 25, 2003) – *U.S. Life Magazine*.
Content: An article on the difficulty in obtaining U.S.-issued international student visas after 9-11. Ling's comment was quoted.
25. *World Journal* (March 27, 2003).
Content: Ling's comment on the impact of U.S.-Iraq war on education and academic research.
26. *TV Channel 26 KTSF (Cable Channel 8) Mandarin News* (December 19, 2002) (a San Francisco Bay Area TV station).
Content: Silicon Valley internship and entrepreneurship education for students from Singapore and Ling's involvement.
27. *Sing Tao Chinese Radio FM96.1* (May 23, 2002) (main Mandarin radio station in the U.S.).
Content: Ling named as Associate Dean for Santa Clara University School of Engineering and his view on university education.
28. *World Journal* (May 15, 2002).
Content: Ling named as Associate Dean for Santa Clara University School of Engineering.
29. *TV Channel 26 KTSF (Cable Channel 8) Mandarin News and Cantonese News* (January 8, 2002) (a San Francisco Bay Area TV station).
Content: Ling named as IEEE Distinguished Lecturer as well as Ling's research and accomplishments in video compression technology.
30. *Silicon Valley / San Jose Business Journal* (two issues: January 4, 2002 and January 11, 2002).
Content: Ling's appearance as an expert in image and video compression technology in Santa Clara University ad.
31. *Sing Tao Daily* (April 27, 2001).
Content: Discussion on the issue of technology and society, in line with Santa Clara University's 150th anniversary.
32. *TV Channel 26 KTSF (Cable Channel 8) Mandarin News and Cantonese News* (April 26, 2001).
Content: Discussion on the issue of technology and society, in line with Santa Clara University's 150th anniversary.
33. *KCBS 740AM* (April 26, 2001) (main-stream radio station in Silicon Valley).
Content: Conference on "Technology and US – A Vision for the Future," in line with Santa Clara University's 150th anniversary.
34. *Sing Tao Daily* (April 2, 2001).
Content: Ling's research accomplishments and career achievements.
35. *World Journal* (July 12, 2000).
Content: Ling named as Santa Clara University School of Engineering Researcher of the Year as well as Ling's research and accomplishments in video compression technology.
36. *World Journal* (June 8, 2000).
Content: Discussion on the issue of possible Microsoft split. Ling's opinion was sought.

37. *World Journal* (May 27, 2000).
Content: The massive hiring of Santa Clara University graduates by Nortel Networks.
38. *World Journal* (May 19, 2000).
Content: Research collaboration between Santa Clara University (U.S.) and Nanyang Technological University (Singapore) in the area of video over IP. Ling headed the research on the U.S. side.
39. *World Journal* (May 17, 2000).
Content: Research collaboration between Santa Clara University and Nortel Networks on HDTV over the Internet. Ling headed the research.
40. *Lianhe Zaobao* (April 27, 2000) (largest nation-wide Chinese newspaper in Singapore).
Content: The signing of memorandum of understanding between Santa Clara University (U.S.) and Nanyang Technological University (Singapore) to conduct joint research on digital TV technology. Ling headed the research on the U.S. side.
41. *The Straits Times* (April 25, 2000) (largest nation-wide English newspaper in Singapore).
Content: The signing of memorandum of understanding. Same event as described above.
42. *Channel 5 News* (English), *Channel 8 News* (Chinese), and *Channel 12 News* (English) (all on April 24, 2000), Television Corporation of Singapore (TCS) (Singapore's main TV broadcast).
Content: The signing of memorandum of understanding. Same event as described above.
43. *World Journal* (December 27, 1999).
Content: Ling's newly published book, research, and accomplishments.
44. *World Journal* (March 4, 1999).
Content: Ling's contributions in the establishment of digital TV broadcasting in Singapore.
45. *World Journal* (June 4, 1996).
Content: Ling's special visits to Taiwan (seminar given at Academia Sinica) and Mainland China (seminars given at Tsinghua University and the Chinese Academy of Sciences).
46. *World Journal* (July 24, 1995).
Content: Ling's advice to students on graduate studies and careers in computer engineering.
47. *World Journal* (July 19, 1995).
Content: IEEE Hot Chips Symposium VII, as well as Ling's work as General Chair of the conference.