

## CURRICULUM VITAE

**Nam Ling, Ph.D., IEEE Fellow, IET Fellow**  
Sanfilippo Family Professor (University Endowed Chair)  
Chair, Department of Computer Engineering  
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As of Date: November 15, 2014

### MAJOR POSITIONS (EMPLOYMENTS)

#### Current Position:

#### **Sanfilippo Family Professor (University Endowed Chair)**

**Professor (tenured)** and **Chair**, Department of Computer Engineering  
Santa Clara University, Santa Clara, California, USA.

#### September 2010 - Present:

**Sanfilippo Family Professor (University Endowed Chair)**, 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.)

#### September 2010 – Present:

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

#### July 2007 – August 2010:

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

#### 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 Circuits and Systems Society Certificate of Appreciation**, awarded July/August 2014.  
(This was in recognition for the time and effort as General Chair of the 2013 IEEE International Conference on Multimedia and Expo (ICME 2013).)
- 2. APSIPA Distinguished Lecturer**, named for 2014 – 2015.  
(APSIPA is the Asia-Pacific Signal and Information Processing Association. The distinguished lecturer (DL) appointment is an honor to recognize the technical achievement, expertise, and leadership of an individual. APSIPA DL serves as an ambassador of APSIPA to promote its image and outreach.)
- 3. Outstanding Overseas Scholar**, Shanghai University of Electric Power, Shanghai, China, awarded and effective January 27, 2014.  
(Awarded by the university to overseas professors with outstanding academic and scholarly qualifications upon reviewed by its academic committee.)
- 4. Cuiying Chair Professor**, Lanzhou University, China, awarded and effective June 27, 2012.  
(Cuiying (Tsuiying) Chair Professorships are awarded to overseas professors with outstanding academic and scholarly qualifications upon reviewed by its academic committee.)
- 5. IET Fellow** – elected on April 28, 2011, effective April 2011.  
(The Institution of Engineering and Technology (IET) Fellow is selected based on successful leadership or outstanding service to the profession over an extended period.)

6. **Sanfilippo Family Professor (University Endowed Chair)**, Santa Clara University, awarded June 2, 2010, effective September 1, 2010.  
(The professorship is awarded to a faculty member who has distinguished himself/herself as a teaching scholar who fosters the highest ideals of a Catholic, Jesuit education – creative scholarship with teaching, collegiality and collaboration with faculty and students, and incorporation of intellectual foundations for ethics and justice.)
7. **2009 Award for Teaching Excellence**, School of Engineering, Santa Clara University, awarded on February 17, 2010.  
(The award recognizes excellence in teaching on the part of the faculty in Engineering. One award is given each year.)
8. **IEEE Fellow - for contributions to video coding algorithms and architectures**, elevated on November 15, 2007, effective January 1, 2008.  
(IEEE is The Institute of Electrical and Electronics Engineers. Fellow 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.)
9. **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. One award is given each year.)
10. **IEEE Distinguished Lecturer (Circuits and Systems)**, named for 2007 – 2008 (second time).  
(This is appointed by the IEEE Circuits and Systems Society Distinguished Lecturer Program.)
11. **Guest Professor**, Shanghai Jiao Tong University, Shanghai, China, awarded and effective May 2006 – present.  
(The honor of Guest Professor is exclusively offered to the selective globally admired experts after the review of the academic committee of the University.)
12. **President’s Recognition Award**, Santa Clara University, awarded on September 13, 2005.  
(The 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.)
13. **Distinguished Visiting Professor**, National Dong Hwa University, Taiwan, March 24-30, 2004.  
(The program was co-sponsored by Taiwan’s Ministry of Education.)
14. **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.  
(ICCE is the flagship conference of IEEE Consumer Electronics Society. Our winning paper was presented at the conference in Los Angeles, California, USA, June 17 – 19, 2003.)
15. **University Award for Recent Achievement in Scholarship**, Santa Clara University, awarded on September 17, 2002.  
(The award 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. One award is given each year. Ling is the third recipient since its creation.)
16. **IEEE Distinguished Lecturer (Circuits and Systems)**, named for 2002-2003.  
(This is appointed by the IEEE Circuits and Systems Society Distinguished Lecturer Program.)
17. **1999 Researcher of the Year**, School of Engineering, Santa Clara University, awarded on May 13, 2000.  
(The award recognizes scholarly achievements on the part of the faculty in Engineering. One award is given each year.)

18. **Appreciation for Outstanding Contribution on Leading MPEG-4 Activity**, Center for Signal Processing, Nanyang Technological University, Singapore, awarded on August 21, 1998.  
(This was in appreciation of leadership in MPEG-4 activity, which led to a major business contract.)
19. **IEEE Computer Society Certificate of Appreciation**, awarded August 25, 1997.  
(This was for the recognition of service and leadership as the General Chair of the 1995 Hot Chips Symposium.)
20. **Outstanding Achievement Award in Teaching, Research, and Service**, Santa Clara University, awarded on April 3, 1992.  
(The award was given to faculty members with outstanding achievement in teaching, research, and service.)
21. **Arthur Vining Davis Junior Faculty Fellowship**, Santa Clara University, period: July 1, 1991 - September 30, 1992, awarded on March 14, 1991.  
(One award was given each year to an Assistant Professor on a competitive basis for a research or creative project.)
22. **U.S. National Science Foundation (NSF) Research Initiation Award**, performance period: July 1, 1990 – June 30, 1993, awarded on May 25, 1990.
23. **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:

- **Recognition for Special Accomplishment**, Santa Clara University, recognized on September 17, 2013, and on September 16, 2014. (This type of recognition started in 2012.)
- **One of the “Best Minds”** met by researchers in the 4<sup>th</sup> Industrial Technology Research Institute (ITRI) (Taiwan) Elite Researchers Program: “Meet the Best Minds,” May 17, 2005.

Highlights of special positions (details see later sections):

- **Keynote Speaker** – Image & Video. Electro. Info. Scene Invest. Workshop 2014, Umedia 2014, VCVP 2014, IET U-media and IET FC 2012, IEEE ICIEA 2012, IEEE ICAST 2011, JCPC 2009, IEEE APCCAS 2008, VCVP 2008.
- **General Chair/General Co-Chair** – IEEE SiPS 2015, Umedia 2015, Umedia 2014, VCVP 2014, IEEE ICME 2013, VCVP 2008, IEEE Hot Chips 1995.
- **Technical Program Co-Chair** – IEEE VCIP 2013, APSIPA ASC 2010, IEEE APCCAS 2010, IEEE ISCAS 2007, IEEE SiPS 2007, DCV 2002, IEEE SiPS 2000.
- **Guest Editor/Associate Editor** - Springer MSSP (2012-2015), Springer HCIS (2014-present), IEEE JSTSP 2013, Springer JSPS (2006, 2010), IEEE TCAS-I (2002 – 2003).
- **Distinguished/Special Speaker or Panelist**, - IEEE ICIEA 2010, U.S. Taiwan High-tech Forum 2004, Academia Sinica 1996 (invited by Yuan T. Lee, President & Nobel laureate).
- **Technical Committee Chair** - IEEE TC CASCOM (2006-2008), IEEE TCMM (1993 – 1995).
- **Book Author** – one in 1999, one in 2015 (expected).
- More than 170 publications. More than 100 invited colloquia/seminars in eight different countries.

## RESPONSIBILITIES AND MAJOR ACCOMPLISHMENTS AS DEPARTMENT CHAIR

- Overseeing
  - **Department of Computer Engineering**, School of Engineering, Santa Clara University (2010 – present).
- The Department of Computer Engineering is the *largest* department in the School of Engineering:
  - One Ph.D. program (Computer Science and Engineering (CSE)), one Engineer’s degree program, two M.S. programs (CSE, Software Engineering), two B.S. programs (CSE, Web Design and Engineering (WDE)), several certificate programs, and an open-university program.
  - Two full Professors, seven Associate Professors, one Assistant Professor, six Full-time Lecturers, 26 Quarterly Part-time Lecturers, and an Administrative Assistant.
  - Advisory board of 10 members.

- Approximately 18 Ph.D. students, 467 M.S. students, and 302 B.S. students.
- More than 170 courses per year, in addition to labs, senior design projects, and graduate research.
- Management and Leadership
  - Managed and led department faculty and staff, assigned work, chaired departmental meetings, and conducted performance evaluations, 2010 – present.
  - Co-chaired the advisory board, 2010 – present.
  - Worked with the Dean on plans and other matters related to the School of Engineering, 2010 – present.
- Planning, Continuous Improvement, and Faculty Strength
  - Led and worked with the Department and its faculty on strategic plans and needs, 2010 – present.
  - Led and worked with the Department and its faculty on continuous improvement of curriculum, development of new courses (in line with technology trend), student learning, enrolment, and faculty workload, 2010 – present.
  - Led and oversaw full-time faculty search and hiring, 2011 – present.
    - Successfully acquired and currently searching for two new tenure-track faculty members, 2014.
    - Successfully acquired, searched, and hired one new tenure-track Assistant Professor and four new Lecturers, 2012 - present.
    - Successfully retained all the tenure-track faculty and Lecturers, 2010 – present.
  - Led departmental level process related to faculty appointment, promotion, and tenure, 2011 – present.
    - One faculty: from Academic Year Lecturer to Renewable-Term Lecturer (2011) and reappointment (2014).
- Student Recruitment & Retention
  - Led the Department in student recruiting, 2011 – present.
    - Effort led to the *highest* enrolment in the Department’s history:
      - Freshmen intake from 36 in 2011 to 93 in 2014.
      - Undergraduate student enrolment from 169 in 2011 to 302 in 2014.
      - Graduate student enrolment from 256 in 2011 to 485 in 2014.
    - Assigned faculty duties and presented at Preview Days and Open Houses.
  - Served as advisor in Summer Orientations, 2011 - present.
  - Contacted/met admitted students, prospective students, and parents, 2010 – present.
  - Advised students, 2010 – present.
  - Participated in other student recruiting events, 2010 – present.
  - Worked with Admin Assistant in organizing special departmental events, 2010 – present.
- Assessment
  - Led the Department through the Accreditation Board for Engineering and Technology (ABET) accreditation process (both Engineering Accreditation Commission (EAC) and Computing Accreditation Commission (CAC)) successfully in its final year, 2010-2011.
  - Led the Department in annual self-assessment processes, 2010 – present.
- Research & Faculty/Staff Development
  - Evaluated faculty grant proposals and leave requests, 2010 – present.
  - Mentored faculty members, 2010 – present.
  - Oversaw faculty research lab space arrangement, 2011 – present.
  - Nominated faculty and staff for awards, 2010 – present.
  - Led mid-probationary review and junior faculty development leave proposal review for one faculty, 2013.
- Academic Programs and Curriculum
  - Worked with faculty, staff, and other departments on undergraduate and graduate yearly course plans, 2010 – present.
  - Oversaw policies and quality related to senior projects, graduate theses, directed research, 2011 – present.
  - Led the departmental curriculum revision and bulletin update processes, 2010 – present.
    - B.S. CSE - worked with Electrical Engineering Department to revise circuit course sequence to enable the inclusion of principles of programming languages as a required course, 2011.
    - B.S. WDE – appointed a committee to revise and strengthen the WDE curriculum, 2012.
  - Oversaw teaching quality and related student matters, 2010 – present.
  - Oversaw Teaching Assistant needs and assignments, 2011 – present.

- Finance
  - Worked with Admin Assistant and Senior Assistant Dean on department budget allocation and usage, 2010 – present.
  - Approved department faculty and staff expenditures, 2010 – present.
- Student Issues
  - Resolved complaints from students; handled cheating cases, 2010 – present.
  - Approved co-op and other paperwork for students, 2010 – present.
  - Oversaw related student awards, 2010 – present.
  - Coordinated PhD Prelim Exams, 2010 – present.
  - Presented at the School of Engineering “PhD night” event, May 2013.
- External Relations & Events
  - Served as contact for companies for student hiring and partnership with faculty, 2010 – present.
  - Presented “State of the Department” at meetings – adjunct lecturer lunches, School industrial advisory board (IAB) meetings, and Department advisory board meetings, 2010 – present.
  - Delivered welcome speech at the 30<sup>th</sup> International Conference on Mass Storage Systems and Technologies (MSST 2014), Santa Clara, California, U.S.A, Jun 2-6, 2014.
  - Worked with various parties and led the Department on the articulation agreement for the “3+2” BA + MS program in the computer science and engineering area between Santa Clara University and the proposed Jesuit Liberal Arts College of Hong Kong, 2012 – present.
  - Led the faculty exchange process between the Department and the Department of Information and Computer Science of the Catholic University of Uruguay, 2012 – 2013.
  - Co-hosted an animation event with the Art & Art History Department and the Communication Department, 2011.

## RESPONSIBILITIES AND MAJOR ACCOMPLISHMENTS AS ASSOCIATE DEAN

- Overseeing
  - **Research and Faculty Development** in the School of Engineering, Santa Clara University (2007 – 2010).
  - **Graduate Studies and Research** in the School of Engineering, Santa Clara University (2002 – 2007).
- The School of Engineering graduate programs during this period:
  - Ph.D., M.S., and Engineer’s degrees in Computer Engineering, Electrical Engineering, and Mechanical Engineering.
  - M.S. degrees in Software Engineering, Engineering Management and Leadership, 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 (Ph.D. exams/theses/policies, cooperative education, international student course load, and other related matters), assessment, and quality of instruction.
  - Led and co-led the effort in Engineering Graduate Program Review and Learning Outcomes, 2005 - 2008.
  - 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 - 2004. Produced a “Quality of Term-Lecturers – Guidebook”, 2004.
  - Streamlined and strengthened Ph.D. graduation procedure and thesis format, 2003 - 2004.
  - Spoke at the “Ph.D. Night” event (to about 70 current and potential Ph.D. students), May 20, 2009.
  - Worked with the University International Student Service in establishing academic policy related to international students, 2002 - 2003.
  - Oversaw the revision of foreign transcript checking process and revised the GRE requirement process for admissions, 2006 - 2007.
- Planned strategic goals for graduate studies in Engineering (program’s missions, budgeting, enrollment, and other related matters).
  - 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 - 2007.
  - Participated in the academic effort in improving graduate enrollment, 2004 - 2007.

- Improved graduate curriculum in Engineering. 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 - 2007.
  - 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 - 2004.
  
- Globalization effort and building University-Industry partnerships for academic cooperation and programs.
  - Initiated the effort to collaborate with Shanghai Jiao Tong University (SJTU), China. A memorandum of understanding (MOU) between the two Universities (Santa Clara and SJTU) was signed later in August 2009, a team effort led by the School Graduate Studies office. (Details are in the section on MOU).
  - 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 - 2007. 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 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 Engineering rep to the University Special Taskforce on Patents and Inventions, 2008 – 2010.
  - Oversaw and reported yearly faculty scholarship accomplishments for the school, 2005 - 2009.
  - Reviewed and approved external grant proposals from Engineering faculty, 2002 - 2010.
  - 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 assistantships and School faculty grants), 2003 – 2010.
  - 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 – 2010.
  - Assisted the Dean in evaluating University internal grant proposals submitted by Engineering faculty, 2005 - 2010.
  - Established and led different Engineering research task forces & committees to help reviewing internal proposals, 2003 – 2010.
  - 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, 2003.
  
- Oversaw other faculty development activities for the School.
  - Served as the Engineering rep to the University Faculty Development Advisory Council, 2007 – 2010.
  - Led the selection process for the School's faculty awards, 2004 – 2010.
  - Assisted the Dean in formulating funding priorities for the School, 2010.
  - Led the effort in structuring the School's best practices for the support of tenured Associate Professors for promotion to full Professors, 2006 - 2007.
  - Led the effort in structuring the School's best practices for the support of Engineering faculty seeking tenure, 2005 – 2006.
  
- 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 - 2004.
  - 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 - 2004.
- Worked with the Director of Graduate Programs to reorganize the Graduate Office and hire two staff members, 2003.
- Related publications and talks.
  - 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.
  - Served as Panelists/Speakers at several Santa Clara University Faculty Development/Teaching-Scholar/Research Workshops/Symposia, 2001 – present.
- Other experiences and contributions.
  - Organized teaching assistant orientation and training sessions, 2009 – 2010.
  - 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 – 2010.
  - Worked with Department Chairs and Assistant Dean on allocating teaching assistantships, 2008 – 2010.
  - Provided academic guidance and approvals to graduate students, 2002 – 2010.
  - 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 graduate students, 2006 - 2007.
  - 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:

- \* Methods for HEVC, 3D-HEVC, and H.264/AVC Video Coding
- \* Depth Coding in 3D Video
- \* Motion Estimation
- \* Rate Control
- \* Intra Prediction
- \* Perceptual Video Coding
- \* Encoder/Decoder Architecture
- \* Face Animation
- \* Systolic Arrays

## KEYNOTE SPEECHES

1. Nam Ling, “3D Video Coding and its Applications: The New Generation,” Keynote Speech, the *2014 Workshop on Image and Video Processing for Applications in Electronic Information Scene Investigation*, Xi’an, China, October 20 – 22, 2014.
2. Nam Ling, “The Next Generation of 3D Video Coding Technology,” Keynote Speech, the *7th International Conference on Ubi-Media Computing (Umedia)*, Ulaanbaatar, Mongolia, July 12 – 14, 2014.



3. Nam Ling, "3D Video Coding and 3D-HEVC: A Research Perspective," Keynote Speech, the *2nd International Workshop on Video Coding and Video Processing (VCVP)*, Shenzhen, China, January 21 - 23, 2014.
4. Nam Ling, "Next Generation Video Coding – HEVC with a Special Look at Intra Prediction", Keynote Speech, *IET International Conference on Ubi-media Computing and IET International Conference on Frontier Computing (IET U-media and IET FC)*, Xining, China, August 16 - 18, 2012.
5. Nam Ling, "High Efficiency Video Coding and its 3D Extension: A Research Perspective," Keynote Speech, the *2012 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Singapore, July 18 – 20, 2012.
6. Nam Ling, "Video Compression – A New Era," Keynote Speech, the *3<sup>rd</sup> IEEE International Conference on Adaptive Science and Technology (ICAST)*, Abuja, Nigeria, November 24 - 26, 2011.
7. Nam Ling, "Video Coding Technology and Applications: What Have We Seen? What Will We See?" Keynote Speech, *2009 Joint Conferences on Pervasive Computing (JCPC)*, Tamsui, Taiwan, December 3 – 5, 2009.
8. Nam Ling, "Video Coding – A Look at Future Challenges," Keynote Speech, the *2008 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS)*, Macao, China, November 30 – December 3, 2008.
9. Nam Ling, "Future Challenges in Video Coding, with a Special Look at Motion Estimation," Keynote Speech, *1st International Workshop on Video Coding and Video Processing (VCVP)*, Shenzhen, China, November 26 – 28, 2008.

## RESEARCH PUBLICATIONS

More than 170 publications (book, book chapters, refereed journals, and refereed conferences):

### (1) BOOKS:

1. Li Song and Nam Ling, *Perceptual Video Coding: Model, Algorithm and Implementation*, accepted to be published by Springer, expected 2015.
2. Nam Ling and M. A. Bayoumi, *Specification and Verification of Systolic Arrays*, World Scientific Publishing Company Pte. Ltd., Singapore, 1999.

### (2) KEYNOTE/DISTINGUISHED INVITED PAPERS IN REFEREED CONFERENCES:

3. Nam Ling, "High Efficiency Video Coding and its 3D Extension: A Research Perspective," keynote paper, *Proceedings of the 2012 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Singapore, pp. 2153 – 2158, July 18 – 20, 2012.
4. Nam Ling, "Expectations and Challenges for Next Generation Video Compression," distinguished invited lecture paper, *Proceedings of the 2010 5<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Taichung, Taiwan, pp. 12 – 17, June 15 – 17, 2010.

### (3) BOOK CHAPTERS:

5. Juan Hu, Yi Fang, Nam Ling, and Li Song, "Topic Modeling for Large-Scale Multimedia Analysis and Retrieval," Chapter 19 in *Big Data: Algorithms, Analytics, and Applications*, Kuan-Ching Li, Hai Jiang, Laurence T. Yang, Alfredo Cuzzocrea, ed., Chapman & Hall/CRC Big Data Series, CRC Press, Taylor & Francis Group, USA, expected 2015.
6. Nam Ling and M. A. Bayoumi, "From Architecture to Algorithm - A Formal Approach," Chapter 10 in *Transformational Approaches to Systolic Design*, G. M. Megson, ed., Chapman & Hall, London, United Kingdom, pp. 242-294, 1994.
7. F. Lin, T. Shih, and Nam Ling, "Axiomatic Approach for Systolic Array Design," a chapter in *Lecture Notes in Artificial Intelligence*, Springer-Verlag, March 1992. Also presented in the Logic Programming Conference, July 1991.

8. Nam Ling and M. A. Bayoumi, "Mapping Algorithms onto Multidimensional Systolic Arrays," 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.
9. Nam Ling and M. A. Bayoumi, "The Specification and Verification of Systolic Arrays," Chapter 40 in *VLSI Signal Processing, III*, R.W.Broderson 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:**

10. Jianjun Lei, Cuicui Zhang, Yuming Fang, Zhouye Gu, Nam Ling, and Chunping Hou, "Depth Sensation Enhancement for Multiple Virtual View Rendering," submitted to *IEEE Transactions on Multimedia*.
11. Minglei Tong, Zhouye Gu, Nam Ling, and Junjie Yang, "Human Centered Perceptual Adaptation for Video Coding," submitted to *Multidimensional Systems and Signal Processing: An International Journal* (Special Issue), Springer.
12. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Low Complexity Bi-Partition Mode Selection for 3D Video Depth Intra Coding," submitted to *Displays* (Special Issue: Next Generation TV Systems and Technologies), Elsevier.
13. Maria Pantoja, Nam Ling, Hari Kalva, and Jae-Beom Lee, "An Efficient VC-1 to H.264 IPB-Picture Transcoder with Pixel Domain Processing," *Multidimensional Systems and Signal Processing: An International Journal*, Springer. (Online version published January 21, 2014.)
14. Zhengyi Luo, Li Song, Shibao Zheng, and Nam Ling, "Raptor Codes Based Unequal Protection for Compressed Video According to Packet Priority," *IEEE Transactions on Multimedia*, Vol. 15, No. 8, pp. 2208 – 2213, December 2013. (Online version published earlier.)
15. Xiaofeng Lu, Li Song, Sumin Shen, Kang He, Songyu Yu, and Nam Ling, "Parallel Hough Transform-Based Straight Line Detection and Its FPGA Implementation in Embedded Vision," *Sensors*, Vol. 13, Issue 7, pp. 9223 - 9247, July 2013, MDPI (Multidisciplinary Digital Publishing Institute, a publisher of open-access journal.)
16. Zhengyi Luo, Li Song, Shibao Zheng, and Nam Ling, "H.264/Advanced Video Control Perceptual Optimization Coding Based on JND-Directed Coefficient Suppression," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 23, No. 6, pp. 935 - 948, June 2013. (Online version published earlier.)
17. Maria Pantoja and Nam Ling, "Transcoding with Resolution Conversion Using Super-Resolution and Irregular Sampling," *Journal of Signal Processing Systems for Signal, Image, and Video Technology* (Special Issue: SoC for Multimedia Networking), Vol. 60, No. 3, pp. 305 – 313, September 2010, Springer. (Online version published May 2009.)
18. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Context Adaptive Lagrange Multiplier (CALM) for Rate-Distortion Optimal Motion Estimation in Video Coding," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 20, No. 6, pp. 820 – 828, June 2010.
19. Jianpeng Dong and Nam Ling, "A Context-Adaptive Prediction Scheme for Parameter Estimation in H.264/AVC Macroblock Layer Rate Control," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 19, No. 8, pp. 1108 – 1117, August 2009.
20. Fengling Li, Nam Ling, and Xiaokang Yang, "Improved Update Step for Scalable Video Coding in Video Surveillance," *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*.]
21. Xiaoquan Yi and Nam Ling, "Improved Normalized Partial Distortion Search with Dual-Halfway-Stop for Rapid Block Motion Estimation," *IEEE Transactions on Multimedia*, Vol. 9, No. 5, pp. 995 – 1003, August 2007.

22. Fengling Li, Nam Ling, and Stephen A. Chiappari, "On the Coding Efficiency of MCTF Update Steps for Scalable Video Coding," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 17, No. 6, pp. 779-784, June 2007.
23. Xiaokang Yang, Yongmin Tan, and Nam Ling, "Rate Control for H.264 with Two-Step Quantization Parameter Determination but Single-Pass Encoding," *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.
24. Minqiang Jiang and Nam Ling, "Low-Delay Rate Control for Real-time H.264/AVC Video Coding," *IEEE Transactions on Multimedia*, Vol. 8, No. 3, pp. 467 – 477, June 2006.
25. Minqiang Jiang and Nam Ling, "On Lagrange Multiplier and Quantizer Adjustment for H.264 Frame-Layer Video Rate Control," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 16, No. 5, pp. 663 – 669, May 2006.
26. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Bit Rate Distribution for Motion Estimation in H.264 Coding," *IEEE Transactions on Consumer Electronics*, Vol. 52, No. 2, pp. 606 – 610, May 2006.
27. Xiaoquan Yi and Nam Ling, "Improved H.264 Rate Control by Enhanced MAD-Based Frame Complexity Prediction," *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.
28. Xiaokang Yang and Nam Ling, "Statistical Multiplexing based on MPEG-4 Fine Granularity Scalability Coding," *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.
29. Xiaoquan Yi and Nam Ling, "Joint Bit Allocation Analysis for Video Streaming Over Networks," *International Journal of Internet Protocol Technology*, Vol. 1, No. 2, Inderscience Publishers, pp. 125 – 129, 2005.
30. Xiaokang Yang, Ce Zhu, Zheng Guo Li, Xiao Lin, and Nam Ling, "An Unequal Packet Loss Resilience Scheme for Video over the Internet," *IEEE Transactions on Multimedia*, Vol. 7, No. 4, pp. 753 – 765, August 2005.
31. Minqiang Jiang and Nam Ling, "On Enhancing H.264/AVC Video Rate Control by PSNR-Based Frame Complexity Estimation," *IEEE Transactions on Consumer Electronics*, Vol. 51, No. 1, pp. 281 – 286, February 2005.
32. Minqiang Jiang, Xiaoquan Yi, and Nam Ling, "Quantizer Control for H.264/AVC Streaming Over Networks," *Journal of Internet Technology*, Vol. 5, No. 3, pp. 301 – 304, 2004.
33. Gunnar Hovden and Nam Ling, "Optimizing Facial Animation Parameters for MPEG-4," *IEEE Transactions on Consumer Electronics*, Vol. 49, No. 4, pp. 1354 – 1359, November 2003.
34. 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," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 13, No. 6, pp. 472-487, June 2003.
35. 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," *Signal Processing: Image Communication*, Vol. 18, No. 3, Elsevier Science, pp. 157-167, March 2003.
36. Nam Ling and Nien-Tsu Wang, "A Real-Time Video Decoder for Digital HDTV," *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.
37. Nam Ling and Nien-Tsu Wang, "Real-time Video Decoding Scheme for HDTV Set-Top Boxes," *IEEE Transactions on Broadcasting*, Vol. 48, No. 4, pp. 353 – 360, December 2002.
38. Siyan Liu and Nam Ling, "Transporting HDTV Data over IP," *Journal of Internet Technology*, Vol. 2, No. 4, pp. 337-341, 2001.

39. N.-T. Wang and Nam Ling, "Architecture for Real-time HDTV Video Decoding," *Tamkang Journal of Science and Engineering*, Vol. 2, No. 2, pp. 53-60, November 1999.
40. C.-W. J. Shih, Nam Ling, and T. Ogunfunmi, "Memory Reduction by Haar Wavelet Transform for MPEG Decoder," *IEEE Transactions on Consumer Electronics*, Vol. 45, No. 3, pp. 867-873, August 1999.
41. J.-H. Li and Nam Ling, "Architecture and Bus Arbitration Schemes for MPEG-2 Video Decoder," *IEEE Transactions on Circuits and Systems for Video Technology*, Vol. 9, No. 5, pp. 727-736, August 1999.
42. Nam Ling, N.-T. Wang, and D.-J. Ho, "An Efficient Controller Scheme for MPEG-2 Video Decoder," *IEEE Transactions on Consumer Electronics*, Vol. 44, No. 2, pp. 451-458, May 1998.
43. J.-H. Li and Nam Ling, "A Novel VQ Codebook Design Technique," *IEEE Transactions on Consumer Electronics*, Vol. 43, No. 4, pp. 1206-1212, November 1997.
44. Nam Ling and J.-H. Li, "A Bus-Monitoring Model for MPEG Video Decoder Design," *IEEE Transactions on Consumer Electronics*, Vol. 43, No. 3, pp. 526-530, August 1997.
45. Nam Ling, "A Special Purpose Formal Verifier for Systolic Designs in DSP Applications," *Journal of VLSI Signal Processing*, Vol. 11, Nos. 1/2, Kluwer Academic Publishers, pp. 169-187, October/November 1995.
46. T. Shih, Nam Ling, R. Davis, and F. Lin, "On the Construction of a Prolog-Based Verifier for Systolic Array Designs," *Computational Intelligence: An International Journal*, Vol. 11, No. 1, Blackwell Publishers, pp. 172-221, February 1995.
47. T. K. Shih and Nam Ling, "A Temporal Arithmetic Based Reasoning System for Systolic Array Designs," *Journal of Information Science and Engineering*, Vol. 10, No. 3, Academia Sinica, Taiwan, pp. 317-338, September 1994.
48. Nam Ling, "A High-Speed Parallel Array Multiplier," *International Journal of Mini and Microcomputers*, Vol. 14, No. 3, pp. 139-146, 1992.
49. Nam Ling and M. A. Bayoumi, "Formal Specification and Verification Strategies for Systolic Arrays," *International Journal of Computer Aided VLSI Design*, Vol. 3, No. 1, pp. 91-112, 1991.
50. Nam Ling and M. A. Bayoumi, "Systolic Temporal Arithmetic: A New Formalism for Specification and Verification of Systolic Arrays," *IEEE Transactions on Computer-Aided Design*, Vol. 9, No. 8, pp. 804-820, August 1990.
51. Nam Ling and M. A. Bayoumi, "Systematic Algorithm Mapping for Multi-dimensional Systolic Arrays," *Journal of Parallel and Distributed Computing*, Vol. 7, No. 2, Academic Press, pp. 368-382, October 1989.
52. M. A. Bayoumi and Nam Ling, "Testing of a NORA CMOS Serial-Parallel Multiplier," *IEEE Journal of Solid-State Circuits*, Vol. 24, No. 2, pp. 494-503, April 1989.
53. Nam Ling and M. A. Bayoumi, "An Efficient Technique to Improve NORA CMOS Testing," *IEEE Transactions on Circuits and Systems*, Vol. CAS-34, No. 12, pp.1609-1611, December 1987.

**(5) PAPERS IN REFEREED CONFERENCES (CONFERENCE PROCEEDINGS):**

54. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Fast Segment-wise DC Coding for 3D Video Compression," submitted to the *2015 IEEE International Symposium on Circuits and Systems (ISCAS)*, Lisbon, Portugal, May 24 - 27, 2015.
55. Sylvia O. N'guessan, Nam Ling, and Zhouye Gu, "Compression of HD Videos by a Contrast-Based Human Attention Algorithm," *Proceedings of the 2014 IEEE International Workshop on Multimedia Signal Processing (MMSP)*, Jakarta, Indonesia, September 22 - 24, 2014.

56. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Fast Bi-Partition Mode Selection for 3D HEVC Depth Intra Coding," *Proceedings of the 2014 IEEE International Conference on Multimedia and Expo (ICME)*, Chengdu, China, July 14 – 18, 2014.
57. Miok Kim, Nam Ling, Li Song, and Zhouye Gu, "Fast Skip Mode Decision with Rate-Distortion Optimization for High Efficiency Video Coding," *Proceedings of the 2014 IEEE International Conference on Multimedia and Expo Workshops*, Chengdu, China, July 14 – 18, 2014.
58. Junhao Zhang, Hengli Lu, Xiaofeng Lu, and Nam Ling, "Partial Occlusion Tracking with Blocks and Discriminative Model," *Proceedings of the 2014 9<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Hangzhou, China, pp. 877 - 882, June 9 - 11, 2014.
59. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Simplified Depth Intra Mode Selection for 3D Video Compression," *Proceedings of the 2014 IEEE International Symposium on Circuits and Systems (ISCAS)*, Melbourne, Australia, pp. 1110 - 1113, June 1 - 5, 2014.
60. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "On 3D-HEVC Depth Map Intra Coding Improvement," *2nd International Workshop on Video Coding and Video Processing (VCVP)*, Shenzhen, China, January 21 - 23, 2014.
61. Miok Kim, Hyuk-Jae Lee, and Nam Ling, "Fast Merge Mode Decision for Diamond Search in High Efficiency Video Coding," *Proceedings of the 2013 IEEE Visual Communications and Image Processing Conference (VCIP)*, Kuching, Malaysia, November 17 - 20, 2013.
62. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Fast Depth Modeling Mode Selection for 3D HEVC Depth Intra Coding," *Proceedings of the 2013 IEEE International Conference on Multimedia and Expo Workshops*, San Jose, California, U.S.A, July 15 - 19, 2013.
63. Xu Chen, Jihong Zhang, Xiaozhen Zheng, Zhouye Gu, and Nam Ling, "A New Modeling for Visual Attention Calculation in Video Coding," *Proceedings of the 2013 IEEE International Conference on Multimedia and Expo Workshops*, San Jose, California, U.S.A, July 15 - 19, 2013.
64. Miok Kim, Nam Ling, John D. Ralston, and Li Song, "A Mesh-based Method for Wavelet Video Coding using Edge-Detection in Low Frequency Subband," *Proceedings of the 4<sup>th</sup> IEEE Latin American Symposium on Circuits and Systems (LASCAS)*, Cusco, Peru, February 27 – March 1, 2013.
65. Qi Cai, Li Song, Guichun Li, and Nam Ling, "Lossy and Lossless Intra Coding Performance Evaluation: HEVC, H.264/AVC, JPEG 2000, and JPEG LS," *Proceedings of the Fourth Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, Hollywood, California, U.S.A, December 3 - 6, 2012.
66. Guichun Li, Lingzhi Liu, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Uniform Probability Model for Deriving Intra Prediction Angular Table in High Efficiency Video Coding," *Proceedings of the 2012 IEEE Visual Communications and Image Processing Conference (VCIP)*, San Diego, California, U.S.A, November 27 – 30, 2012.
67. Zhengyi Luo, Li Song, Shibao Zheng, and Nam Ling, "Optimized Nested Protection for Video Region of Interest with Raptor Codes," *Proceedings of the 2012 IEEE Visual Communications and Image Processing Conference (VCIP)*, San Diego, California, U.S.A, November 27 – 30, 2012.
68. Sylvia N'guessan and Nam Ling, "Human Attention Region-of-Interest in I-frame for Video Coding," *Proceedings of the 2012 IEEE Visual Communications and Image Processing Conference (VCIP)*, San Diego, California, U.S.A, November 27 – 30, 2012.
69. Xiaofeng Lu, Li Song, Songyu Yu, and Nam Ling, "Object Contour Tracking Using Multi-feature Fusion based Particle Filter," *Proceedings of the 2012 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Singapore, pp. 232 – 237, July 18 – 20, 2012.

70. John Judnich and Nam Ling, "Symmetric Cluster Set Level of Detail for Real-Time Terrain Rendering," *Proceedings of the 2012 IEEE International Conference on Multimedia and Expo (ICME)*, Melbourne, Australia, pp. 320 – 324, July 9 – 13, 2012.
71. Miok Kim, Nam Ling, John D. Ralston, and Steven E. Saunders, "Non-Delaunay Hierarchical Mesh-based Motion Estimation and Compensation for Wavelet Video Coding," *Proceedings of the 2012 IEEE International Symposium on Circuits and Systems (ISCAS)*, Seoul, South Korea, pp. 1895 – 1898, May 20 - 23, 2012.
72. John Judnich and Nam Ling, "Fast Multiresolution Terrain Rendering with Symmetric Cluster Sets," *Proceedings of the 4<sup>th</sup> ACM SIGGRAPH Conference and Exhibition on Computer Graphics and Interactive Techniques in Asia (SIGGRAPH Asia)*, Hong Kong, China, December 12 – 15, 2011.
73. Miok Kim and Nam Ling, "High-Band Signals in Motion Estimation and Compensation Techniques for Wavelet Video Coding," *Proceedings of the 2011 6<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA)*, Beijing, China, pp. 625 - 629, June 21 - 23, 2011.
74. Guichun Li, Lingzhi Liu, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Integration of Plane Mode with Multiple Predictor Sets in Intra Prediction for Video Coding," *Proceedings of the 2011 IEEE International Symposium on Circuits and Systems (ISCAS)*, Rio de Janeiro, Brazil, pp. 617 – 620, May 15 - 18, 2011.
75. Maria Pantoja and Nam Ling, "Acceleration of Reconfigurable Video Coding Using New Parallel Architectures," *Proceedings of the Second Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)*, Singapore, pp. 23 – 26, December 14 – 17, 2010.
76. Jun Zhang, Xiang Li, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Prediction-Based Macroblock Mode Mapping for Video Coding," *Proceedings of the 2010 IEEE International Symposium on Circuits and Systems (ISCAS)*, Paris, France, pp. 385 – 388, May 30 – June 2, 2010.
77. Xiang Li, Lingzhi Liu, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Prediction-Based Adaptive Transform Coefficients Scanning for Inter-Frame Video Coding," *Proceedings of the 2010 IEEE International Symposium on Circuits and Systems (ISCAS)*, Paris, France, pp. 4205 – 4208, May 30 – June 2, 2010.
78. Maria Pantoja and Nam Ling, "A Two-Level Rate Control Approach for Video Transcoding," *Proceedings of the 2009 IEEE International Conference on Image Processing (ICIP)*, Cairo, Egypt, pp. 3701 – 3704, November 7 –11, 2009.
79. Maria Pantoja and Nam Ling, "Adaptive Transform Size and Frame-Field Selection for Efficient VC-1 to H.264 High Profile Transcoding," *Proceedings of the 2009 IEEE International Symposium on Circuits and Systems (ISCAS)*, Taipei, Taiwan, pp. 2357 – 2360, May 24 – 27, 2009.
80. Maria Pantoja and Nam Ling, "Low Complexity Rate Control for VC-1 to H.264 Transcoding," *Proceedings of the 2009 IEEE International Symposium on Circuits and Systems (ISCAS)*, Taipei, Taiwan, pp. 888 – 891, May 24 – 27, 2009.
81. Jun Zhang, Xiang Li, Nam Ling, Jianhua Zheng, and Xiaozhen Zheng, "An Efficient Entropy Coding Method for Macroblock Modes in H.264," *1st International Workshop on Video Coding and Video Processing (VCVP)*, Shenzhen, China, November 26 – 28, 2008.
82. Maria Pantoja and Nam Ling, "Transcoding with Quality Enhancement and Irregular Sampling," *Proceedings of the 2008 IEEE International Conference on Image Processing (ICIP)*, San Diego, California, USA, pp. 2852 - 2855, October 12 – 15, 2008.
83. Jianpeng Dong and Nam Ling, "A Model Parameter and MAD Prediction Scheme for H.264 Macroblock Layer Rate Control," *Proceedings of the 2008 IEEE International Symposium on Circuits and Systems (ISCAS)*, Seattle, Washington, USA, pp. 628 – 631, May 18 - 21, 2008.
84. Cheng-Ling Tseng and Nam Ling, "Flat Hex Pattern for Large Range Fast Motion Estimation," *IEEE International Conference on Consumer Electronics (2008 Digest of Technical Papers) (ICCE)*, Las Vegas, Nevada, USA, P3-2, January 9 - 13, 2008.

85. Jianpeng Dong and Nam Ling, "Enhanced Linear R-Q Model Based Rate Control for H.264/AVC Using Context-Adaptive Parameter Estimation," *Proceedings of the 2007 IEEE Workshop on Signal Processing Systems (SiPS)*, Shanghai, China, pp. 698 – 703, October 17 - 19, 2007.
86. Maria Pantoja, Nam Ling, and Weijia Shang, "Coefficient Conversion for Transform Domain VC-1 to H.264 Transcoding," *Proceedings of the 2007 IEEE Workshop on Signal Processing Systems (SiPS)*, Shanghai, China, pp. 363 – 367, October 17 - 19, 2007.
87. Jianpeng Dong and Nam Ling, "On Model Parameter Estimation for H.264/AVC Rate Control," *Proceedings of the 2007 IEEE International Symposium on Circuits and Systems (ISCAS)*, New Orleans, Louisiana, USA, pp. 289 – 292, May 27 - 30, 2007.
88. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Chroma Coding Efficiency Improvement with Context Adaptive Lagrange Multiplier (CALM)," *Proceedings of the 2007 IEEE International Symposium on Circuits and Systems (ISCAS)*, New Orleans, Louisiana, USA, pp. 293 - 296, May 27 - 30, 2007.
89. Fengling Li, Nam Ling, and Stephen A. Chiappari, "Multi-Stage MCTF Coding Efficiency Analysis with Directed-Tree Model," *Proceedings of the 2007 IEEE International Symposium on Circuits and Systems (ISCAS)*, New Orleans, Louisiana, USA, pp. 1751 - 1754, May 27 - 30, 2007.
90. Minqiang Jiang and Nam Ling, "Bit Allocation Scheme for Low-Delay H.264/AVC Rate Control," *Proceedings of the 2006 IEEE International Conference on Image Processing (ICIP)*, Atlanta, Georgia, USA, pp. 2503 –2506, October 8 – 11, 2006.
91. Fengling Li, Nam Ling, and Stephen A. Chiappari, "A Theoretical Model and Study of Weighted MCTF Residual Energy," *Proceedings of the 2006 IEEE Workshop on Signal Processing Systems (SiPS)*, Banff, Alberta, Canada, pp. 118 – 123, October 2 – 4, 2006.
92. Jianpeng Dong and Nam Ling, "An Iterative Method for Frame-Level Adaptive Wiener Interpolation Filters in Video Coding," *Proceedings of the 2006 IEEE Workshop on Signal Processing Systems (SiPS)*, Banff, Alberta, Canada, pp. 113 – 117, October 2 – 4, 2006.
93. Fengling Li and Nam Ling, "Improved Content Adaptive Update Weight Control in Motion-Compensated Temporal Filtering," *Proceedings of the 2006 IEEE International Symposium on Circuits and Systems (ISCAS)*, Island of Kos, Greece, pp. 3009 – 3012, May 21 – 24, 2006.
94. Fengling Li, Nam Ling, and Stephen A. Chiappari, "The Effect of MCTF Update Step on Coding Efficiency for H.264/AVC Scalable Extension – A Theoretical Approach," *Proceedings of the Picture Coding Symposium 2006 (PCS)*, Beijing, China, April 24 – 26, 2006.
95. Jianpeng Dong and Nam Ling, "Adaptive Intra Prediction Padding to Improve Intra Motion Compensation," *Proceedings of the Picture Coding Symposium 2006 (PCS)*, Beijing, China, April 24 – 26, 2006.
96. Fengling Li and Nam Ling, "Improved Update Steps Through Motion Vector Correlation Analysis for Scalable Video Coding," *IEEE International Conference on Consumer Electronics (2006 Digest of Technical Papers) (ICCE)*, Las Vegas, Nevada, USA, pp. 485 – 486, January 9 - 11, 2006.
97. Jun Zhang, Xiaoquan Yi, Nam Ling, and Weijia Shang, "Bit Rate Distribution Analysis for Motion Estimation in H.264," *IEEE International Conference on Consumer Electronics (2006 Digest of Technical Papers) (ICCE)*, Las Vegas, Nevada, USA, pp. 483 – 484, January 9 - 11, 2006.
98. Fengling Li and Nam Ling, "Adaptively Weighted Update Steps Using Chrominance for Scalable Video Coding," *Proceedings of the 2005 IEEE Workshop on Signal Processing Systems (SiPS)*, Athens, Greece, pp. 682 – 687, November 2 – 4, 2005.
99. Xiaoquan Yi and Nam Ling, "Scalable Complexity-Distortion Model for Fast Motion Estimation," *Proceedings of SPIE Visual Communications and Image Processing 2005 (VCIP)*, Beijing, China, pp. 1343 – 1353, July 12 – 15, 2005.

100. Fengling Li and Nam Ling, "Improved Motion Vector Predictor for Video Coding," *Proceedings of SPIE Visual Communications and Image Processing 2005 (VCIP)*, Beijing, China, pp. 2279 - 2287, July 12 - 15, 2005.
101. Xiaoquan Yi and Nam Ling, "Rapid Block-Matching Motion Estimation Using Modified Diamond Search Algorithm," *Proceedings of the 2005 IEEE International Symposium on Circuits and Systems (ISCAS)*, Kobe, Japan, pp. 5489 - 5492, May 23 - 26, 2005.
102. Minqiang Jiang and Nam Ling, "Frame-Layer H.264 Rate Control Improvement Using Lagrange Multiplier and Quantizer," *Proceedings of the 2005 IEEE International Symposium on Circuits and Systems (ISCAS)*, Kobe, Japan, pp. 4369 - 4372, May 23 - 26, 2005.
103. Minqiang Jiang and Nam Ling, "An Improved Frame and Macroblock Layer Bit Allocation Scheme for H.264 Rate Control," *Proceedings of the 2005 IEEE International Symposium on Circuits and Systems (ISCAS)*, Kobe, Japan, pp. 1501 - 1504, May 23 - 26, 2005.
104. Xiaoquan Yi and Nam Ling, "Fast Pixel-Based Video Scene Change Detection," *Proceedings of the 2005 IEEE International Symposium on Circuits and Systems (ISCAS)*, Kobe, Japan, pp. 3443 - 3446, May 23 - 26, 2005.
105. Xiaoquan Yi and Nam Ling, "Improved Partial Distortion Search Algorithm for Rapid Block Motion Estimation via Dual-Halfway-Stop," *Proceedings of the 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Philadelphia, Pennsylvania, USA, pp. II-917 - II-920 (Vol. II), March 18 - 23, 2005.
106. Xiaoquan Yi and Nam Ling, "Zero-Motion Vector-Biased Cross-Diamond Search Algorithm for Rapid Block Matching Motion Estimation," *Proceedings of Image and Video Communications and Processing 2005, IS&T/SPIE 17<sup>th</sup> Annual Symposium on Electronic Imaging (Electronic Imaging 2005)*, San Jose, California, USA, pp. 995 - 1006, January 16 - 20, 2005.
107. Minqiang Jiang, Xiaoquan Yi, and Nam Ling, "On Enhancing H.264 Rate Control by PSNR-Based Frame Complexity Estimation," *IEEE International Conference on Consumer Electronics (2005 Digest of Technical Papers) (ICCE)*, Las Vegas, Nevada, USA, pp. 231 - 232, January 8 - 12, 2005.
108. Vivek Venkatraman, Shoba Krishnan, and Nam Ling, "Architecture for De-Blocking Filter in H.264," *Proceedings of the Picture Coding Symposium 2004 (PCS)*, San Francisco, California, USA, December 15 - 17, 2004.
109. Xiaoquan Yi and Nam Ling, "Rate Control Using Enhanced Frame Complexity Measure for H.264 Video," *Proceedings of the 2004 IEEE Workshop on Signal Processing Systems (SiPS)*, Austin, Texas, USA, pp. 263 - 268, October 13 - 15, 2004.
110. Z. G. Li, Nam Ling, Susanto Rahardja, Xiao Lin, and Ping Li, "An Iterative Method for Hypothetical Reference Decoder," *Proceedings of the 2004 IEEE International Conference on Multimedia and Expo (ICME)*, Taipei, Taiwan, TP1-4, June 27 - 30, 2004.
111. Minqiang Jiang, Xiaoquan Yi, and Nam Ling, "Frame Layer Bit Allocation Scheme for Constant Quality Video," *Proceedings of the 2004 IEEE International Conference on Multimedia and Expo (ICME)*, Taipei, Taiwan, TP4-4, June 27 - 30, 2004.
112. Minqiang Jiang, Xiaoquan Yi, and Nam Ling, "Improved Frame-Layer Rate Control for H.264 Using MAD Ratio," *Proceedings of the 2004 IEEE International Symposium on Circuits and Systems (ISCAS)*, Vancouver, Canada, pp. III-813 - III-816 (Vol. III), May 23 - 26, 2004.
113. Gunnar Hovden and Nam Ling, "An MPEG-4 Facial Animation Parameters Generation System," *Proceedings of the 2003 IEEE Workshop on Signal Processing Systems (SiPS)*, Seoul, Korea, pp. 171-176, August 27 - 29, 2003.
114. Gunnar Hovden and Nam Ling, "MPEG-4 FAP Generation as an Optimization Problem," *IEEE International Conference on Consumer Electronics (2003 Digest of Technical Papers) (ICCE)*, Los Angeles, California, USA, pp. 162-163, June 17 - 19, 2003.
115. X. K. Yang, C. Zhu, Z. G. Li, X. Lin, and Nam Ling, "Unequal Packet Loss Resilience for MPEG-4 Video over the Internet," *Proceedings of the 2003 IEEE International Symposium on Circuits and Systems (ISCAS)*, Bangkok, Thailand, pp. II-832 - II-835 (Vol. II), May 25 - 28, 2003.



116. X. K. Yang, Nam Ling, C. Zhu, and Z. G. Li, "An MPEG-4 FGS-Based Statistical Multiplexer," *Proceedings of the Third International Workshop on Digital and Computational Video (DCV)*, Clearwater Beach, Florida, USA, pp. 143-150, November 14 – 15, 2002.
117. Z. G. Li, Nam Ling, G. N. Feng, F. Pan, K. P. Lim, and S. Wu, "Adaptive Rate Control for Real Time Video Coding Process," *Proceedings of the Third International Workshop on Digital and Computational Video (DCV)*, Clearwater Beach, Florida, USA, pp. 60-67, November 14 – 15, 2002.
118. X. K. Yang, C. Zhu, Z. G. Li, G. N. Feng, S. Wu, and Nam Ling, "A Degressive Error Protection Algorithm for MPEG-4 FGS Video Streaming," *Proceedings of the 2002 IEEE International Conference on Image Processing (ICIP)*, Rochester, New York, USA, pp. III-737 – III-740 (Vol. III), September 22 – 25, 2002.
119. X. K. Yang, C. Zhu, Z. G. Li, G. N. Feng, S. Wu, and Nam Ling, "Unequal Error Protection for Motion Compensated Video Streaming Over the Internet," *Proceedings of the 2002 IEEE International Conference on Image Processing (ICIP)*, Rochester, New York, USA, pp. II-717 – II-720 (Vol. II), September 22 – 25, 2002.
120. Z. G. Li, C. Zhu, X. K. Yang, G. N. Feng, S. Wu, P. Feng, and Nam Ling, "A Router Based Unequal Error Control Scheme for Video Over the Internet," *Proceedings of the 2002 IEEE International Conference on Image Processing (ICIP)*, Rochester, New York, USA, pp. II-713 – II-716 (Vol. II), September 22 – 25, 2002.
121. Z. G. Li, Nam Ling, C. Zhu, X. K. Yang, G. N. Feng, S. Wu, and P. Feng, "Adaptive Unequal Error Control for Video Over the Internet," *Proceedings of the IEEE International Conference on Multimedia and Expo (ICME)*, Lausanne, Switzerland, pp. 169-172, August 26 – 29, 2002.
122. Z. G. Li, C. Zhu, F. Pan, G. Feng, X. Yang, S. Wu, and Nam Ling, "A Novel Joint Rate Control Scheme for the Coding of Multiple Real Time Video Programs," *Proceedings of the 22nd International Conference on Distributed Computing Systems Workshops (ICDCS)*, Vienna, Austria, pp. 241 – 245, July 2-5, 2002. (*4th International Workshop on Multimedia Network Systems and Applications (MNSA)*).
123. Z. G. Li, Nam Ling, G. N. Feng, C. Zhu, X. K. Yang, S. Wu, and F. Pan, "Packetization Algorithms for MPEG-4 Fine Granularity Scalability over the Internet," *3<sup>rd</sup> IEEE Workshop and Exhibition on MPEG-4 (WEMP4)*, San Jose, California, USA, pp. 17 – 20, June 25-27, 2002.
124. Nam Ling and Nien-Tsu Wang, "A Real-Time HDTV Video Decoder," *Proceedings of the 2001 IEEE Workshop on Signal Processing Systems (SiPS)*, Antwerp, Belgium, pp. 259-270, September 26-28, 2001.
125. J. Thinakaran, D.-J. Ho, and Nam Ling, "Fast Shape Decoding for MPEG-4 Video," *Proceedings of the 2000 IEEE Workshop on Signal Processing Systems (SiPS)*, Lafayette, Louisiana, USA, pp. 110-119, October 11-13, 2000.
126. Nam Ling, D.-J. Ho, and G. Wu, "Hardware Module for an Adaptive Modeling Unit of Multi-symbol Multiplication-free Arithmetic Encoder," *Proceedings of the 2000 IEEE Workshop on Signal Processing Systems (SiPS)*, Lafayette, Louisiana, USA, pp. 285-294, October 11-13, 2000.
127. J. Thinakaran, D.-J. Ho, and Nam Ling, "An Architecture for MPEG-4 Binary Shape Decoder," *Proceedings of the 2000 IEEE International Symposium on Circuits and Systems (ISCAS)*, Geneva, Switzerland, pp. II-457 – II-460 (Vol. 2), May 28-31, 2000. (*Workshop and Exhibition on MPEG-4*).
128. L.-P. Chau, Nam Ling, G. Hovden, H. Lan, H.-C. Ng, and K.-P. Lim, "An MPEG-4 Real-time Video Decoder Software," *Proceedings of the 1999 IEEE International Conference on Image Processing (ICIP)*, Kobe, Japan, pp. 249-253 (Vol. 1), October 25-28, 1999.
129. G. Hovden and Nam Ling, "On Speed Optimization of MPEG-4 Decoder for Real-time Multimedia Applications," *Proceedings of 3<sup>rd</sup> International Conference on Computational Intelligence and Multimedia Applications (ICCIMA)*, New Delhi, India, pp. 399-402, September 23-26, 1999.
130. C.-W. J. Shih, T. Ogunfunmi, and Nam Ling, "Wavelet-Based Embedded Memory Reduction for MPEG Decoder," *Proceedings of the 1999 IEEE International Workshop on Multimedia Signal Processing*, Copenhagen, Denmark, pp. 327-332, September 13-15, 1999.

131. C.-W. Shih, Nam Ling, and T. Ogunfunmi, "Memory Reduction by Haar Wavelet Transform for MPEG Decoder," *IEEE International Conference on Consumer Electronics (1999 Digest of Technical Papers) (ICCE)*, Los Angeles, California, USA, pp. 116-117, June 22-24, 1999.
132. L.-P. Chau, Nam Ling, G. Hovden, H. Lan, H.-C. Ng, and K.-P. Lim, "A Real-time Realization of MPEG-4 Video Decoder," *Proceedings of the 1999 IEEE International Symposium on Circuits and Systems (ISCAS)*, Orlando, Florida, USA, pp. I-222 – I-225 (Vol. 1), May 30 – June 2, 1999.
133. N.-T. Wang and Nam Ling, "A Novel Dual-Path Architecture for HDTV Video Decoding," *Proceedings of the IEEE Data Compression Conference (DCC)*, Snowbird, Utah, USA, p. 557, March 29-31, 1999.
134. N.-T. Wang, C.-W. Shih, D. J. Wong-Ho, and Nam Ling, "MPEG-2 Video Decoder for DVD," *Proceedings of the 8<sup>th</sup> Great Lakes Symposium on VLSI*, Lafayette, Louisiana, USA, pp. 157-160, February 19-21, 1998.
135. C.-W. Shih and Nam Ling, "Polyphase Filter Architectures for MPEG Audio Using Fast IDCT," *Conference Record of the 31<sup>st</sup> Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, California, USA, November 2-5, 1997.
136. Nam Ling and C.-W. Shih, "Two Polyphase Filter Architectures for MPEG Audio," *Proceedings of the 40<sup>th</sup> Midwest Symposium on Circuits and Systems*, Sacramento, California, USA, August 3-6, 1997.
137. J.-H. Li and Nam Ling, "An Efficient Video Decoder Design for MPEG-2 MP@ML," *Proceedings of the 1997 IEEE International Conference on Application Specific Systems, Architectures, and Processors (ASAP)*, Zurich, Switzerland, pp. 509-518, July 14-16, 1997.
138. Nam Ling and J.-H. Li, "A Bus-Monitoring Model for MPEG Decoder Design," *IEEE International Conference on Consumer Electronics (1997 Digest of Technical Papers) (ICCE)*, Rosemont, Illinois, USA, pp. 180-181, June 11-13, 1997.
139. J.-H. Li and Nam Ling, "Reflection Operation in Vector Quantizer," *Proceedings of the 1996 International Conference on Circuits and System Sciences*, Shanghai, China, pp. 184-187, June 20-25, 1996.
140. Nam Ling and R. Advani, "Architecture of a Fast Motion Estimator for MPEG Video Coding," *Proceedings of the 1996 International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN)*, Beijing, China, pp. 473-479, June 12-14, 1996.
141. Nam Ling and J.-H. Li, "A Codebook Design Technique for Better Image Quality in Vector Quantization," *Proceedings of the IEEE Data Compression Conference (DCC)*, Snowbird, Utah, USA, p. 447, March 31 - April 3, 1996.
142. Nam Ling and R. Advani, "A High Speed Motion Estimator Using 2-D Log Search Algorithm," *Proceedings of the IEEE Data Compression Conference (DCC)*, Snowbird, Utah, USA, p. 448, March 31 - April 3, 1996.
143. Nam Ling and J.-H. Li, "A Vector Quantizer with Increased Codebook Patterns," *Proceedings of the 29<sup>th</sup> Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, California, USA, pp. 244-248, October 29 - November 1, 1995.
144. Nam Ling and J.-H. Li, "An Improved Vector Quantizer for Image Compression," *Proceedings of the 2<sup>nd</sup> IASTED/ISMM International Conference on Distributed Multimedia Systems and Applications*, Stanford, California, USA, pp. 209-211, August 7-9, 1995.
145. A. Deb and Nam Ling, "High-Level Synthesis of Fast Video Compression Algorithms," *Proceedings of the 37<sup>th</sup> Midwest Symposium on Circuits and Systems*, Lafayette, Louisiana, USA, pp. 62-65, August 3 -5, 1994.
146. T. Ogunfunmi and Nam Ling, "Comparisons of Different Systolic Arrays for the QR Decomposition-Based Least Squares Technique," *Proceedings of the 37<sup>th</sup> Midwest Symposium on Circuits and Systems*, Lafayette, Louisiana, USA, pp. 306-309, August 3 -5, 1994.

147. R. Bitonio, Nam Ling, and F. Lin, "Compressing Images Using Fractals," *Proceedings of the Silicon Valley Personal Computer Design Conference (Volume on Multimedia Subsystems Design)*, San Jose, California, USA, pp. 33 - 42, July 27 - 29, 1994.
148. A. Deb and Nam Ling, "An Integrated System Architecture for Binary Image Understanding," *Proceedings of Workshop on Computer Architectures for Machine Perception (CAMP)*, New Orleans, Louisiana, USA, pp. 446-454, December 15-17, 1993.
149. Nam Ling, "A Simple Expert System for the Reasoning of Systolic Designs," *Proceedings of the International Conference on Application Specific Array Processors (ASAP)*, Venice, Italy, pp. 128-131, October 25-27, 1993.
150. Nam Ling and T. Shih, "VSTA: A Prolog-Based Formal Verifier for Systolic Array Designs," *Proceedings of the 1993 International Conference on Parallel Processing (ICPP)*, St. Charles, Illinois, USA, pp. II-73 to II-76, August 16-20, 1993.
151. K. Ramakrishnan and Nam Ling, "An Efficient Systolic Array Design for the Discrete Sine Transform," *Proceedings of the 36th Midwest Symposium on Circuits and Systems*, Detroit, Michigan, USA, pp. 951- 953, August 16-18, 1993.
152. Nam Ling, J. Huang, and T. Shih, "The Use of Fixed Point Induction in Verifying Systolic Array Designs: An Applicative Approach," *Proceedings of the 36th Midwest Symposium on Circuits and Systems*, Detroit, Michigan, USA, pp. 942-944, August 16-18, 1993.
153. T. Ogunfunmi and Nam Ling, "Application of QR Decomposition-Based Least Square Technique to Improve Air Traffic Control Radar," *Proceedings of the 36th Midwest Symposium on Circuits and Systems*, Detroit, Michigan, USA, pp. 488-491, August 16-18, 1993.
154. H. Kumar, R. Kalyan, M. A. Bayoumi, A. Tyagi, and Nam Ling, "Parallel Implementation of a Cut and Paste Maze Routing Algorithm," *Proceedings of the 1993 IEEE International Symposium on Circuits and Systems (ISCAS)*, Chicago, Illinois, USA, pp. 2035-2038, May 3-6, 1993.
155. T. Shih, Nam Ling, and X. Chen, "A Temporal Rule-Based Expert System for Systolic Array Designs," *Proceedings of the 1992 International Conference on Parallel and Distributed Systems (ICPADS)*, Hsinchu, Taiwan, pp. 306-313, Dec. 16-18, 1992.
156. Nam Ling, "Incorporating Formal Techniques Into Systolic Array Synthesis," *Proceedings of the 1992 IEEE International Symposium on Circuits and Systems (ISCAS)*, San Diego, California, USA, pp. 451- 454, May 10-13, 1992.
157. F. Lin, T. Shih, Nam Ling, and R. Davis, "Using Prolog as a Tool for Systolic Array Designs," *Proceedings of the International Conference & Exhibition on The Practical Application of Prolog, Vol. 1*, London, United Kingdom, pp. 1-27, April 1-3, 1992.
158. Nam Ling, T. Shih, and J. Huang, "Inductive Techniques for Formal Verification of Systolic Array Designs in DSP Applications," *Proceedings of the 1992 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Vol. 5*, San Francisco, California, USA, pp. 573-576, March 23-26, 1992.
159. T. Shih, Nam Ling, R. Davis, and F. Lin, "An Automated Design Specification and Verification Tool for Systolic Architectures," *Proceedings of the Hawaii International Conference on System Sciences, Vol. II*, Kauai, Hawaii, USA, pp. 6-17, January 7-10, 1992.
160. E. R. Khan and Nam Ling, "Systolic Architectures for Artificial Neural Nets," *Proceedings of the International Joint Conference on Neural Networks (IJCNN)*, Singapore, pp. 620-627, November 18-21, 1991.
161. F. Lin, T. Shih, and Nam Ling, "Verification Tool for Systolic Array Design," *Proceedings of the Third International Conference on Tools for Artificial Intelligence (TAI)*, San Jose, California, USA, pp. 488-492, November 10-13, 1991.

162. A. Deb and Nam Ling, "A Parallel Architecture for an Integrated Vision System for Binary Images," *Proceedings of the Fourth ISMM/ASTED International Conference on Parallel and Distributed Computing and Systems*, Washington, D.C., USA, pp. 214-218, October 8-11, 1991.
163. Nam Ling, F. Lin, T. Shih, and R. Davis, "Automatic Formal Verification of Systolic Array Designs," *Proceedings of the International Conference on Application Specific Array Processors (ASAP)*, Barcelona, Spain, pp. 338-354, September 2-4, 1991.
164. F. Lin, T. Shih, and Nam Ling, "Axiomatic Approach for Systolic Array Design," *Proceedings of The Logic Programming Conference (LPC)*, Tokyo, Japan, pp. 25-33, July 8-11, 1991.
165. A. Deb and Nam Ling, "A Massively Parallel and Versatile Architecture for Computer Vision," *Proceedings of the First Great Lakes Symposium on VLSI*, Kalamazoo, Michigan, USA, pp. 74-79, March 1-2, 1991.
166. E. R. Khan and Nam Ling, "Two-Dimensional Multirate Systolic Array Design for Artificial Neural Networks," *Proceedings of the First Great Lakes Symposium on VLSI*, Kalamazoo, Michigan, USA, pp. 186-193, March 1-2, 1991.
167. Nam Ling, "A Fast VLSI Parallel Array Multiplier for DSP Application," *Proceedings of the ISMM International Conference on Parallel and Distributed Computing, and Systems*, New York, New York, USA, pp. 29-33, October 10-12, 1990.
168. M. A. Bayoumi, J. L. Shah, and Nam Ling, "Parallel Algorithms Prototyping: A Case Study," *Proceedings of the 1990 IEEE International Symposium on Circuits and Systems (ISCAS)*, New Orleans, Louisiana, USA, pp. 3263-3266, May 1-3, 1990.
169. Nam Ling and M. A. Bayoumi, "STA: A Tool for Systolic Array Reasoning," *Proceedings of the 1989 IEEE International Symposium on Circuits and Systems (ISCAS)*, Portland, Oregon, USA, pp. 461-464, May 8-11, 1989.
170. Nam Ling and M. A. Bayoumi, "The Design and Implementation of Multidimensional Systolic Arrays for DSP Applications," *Proceedings of the 1989 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Glasgow, Scotland, U.K., pp. 1142-1145, May 23-26, 1989.
171. Nam Ling and M. A. Bayoumi, "The Specification and Verification of Systolic Arrays," *1988 IEEE Workshop on VLSI Signal Processing*, Monterey, California, USA, November 2-4, 1988. Paper published in *VLSI Signal Processing, III*, IEEE Press, 1988.
172. Nam Ling and M. A. Bayoumi, "Algorithms for High Speed Multi-Dimensional Arithmetic and DSP Systolic Arrays," *Proceedings of the 1988 International Conference on Parallel Processing (ICPP)*, St. Charles, Illinois, USA, pp. 367-374, August 15-19, 1988.
173. Nam Ling and M. A. Bayoumi, "An Algorithm Transformation Technique for Multi-Dimensional DSP Systolic Arrays," *Proceedings of the 1988 IEEE International Symposium on Circuits and Systems (ISCAS)*, Espoo, Finland, pp. 2275-2278, June 7-9, 1988.
174. Nam Ling and M. A. Bayoumi, "A Testable NORA CMOS Serial-Parallel Multiplier," *Proceedings of the 1988 IEEE International Symposium on Circuits and Systems (ISCAS)*, Espoo, Finland, pp. 251-254, June 7-9, 1988.
175. Nam Ling and M. A. Bayoumi, "Multi-Dimensional Systolic Networks for DSP Algorithms," *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.
176. Nam Ling, M. A. Bayoumi, and K. S. Reddy, "VLSI Array Implementation of Modified Booth Algorithm," *Proceedings of the 1987 South Central Regional ACM Conference*, Lafayette, Louisiana, USA, pp. 205-221, November 19-21, 1987.
177. Nam Ling and M. A. Bayoumi, "A New Testable CMOS Multiplier," *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 some projects funded by research grants.

## ADOPTED CONTRIBUTIONS TO INTERNATIONAL STANDARDS

### (1) NORMATIVE CONTRIBUTIONS ADOPTED:

1. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, “3D-CE5 related: On Neighbouring Reference Pixel Selection for Depth Intra Coding,” JCT3V-G0143, adopted at the *7th Meeting of Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11*, San Jose, California, U.S.A, January 9 – 17, 2014.  
(The method was adopted into the 3D-HEVC video coding international standard – including the 3D-HEVC text document JCT3V-G1005 and the *3D-HEVC reference software HTM 10.0* onwards. Our method improves reference pixel selection for depth intra coding in 3D-HEVC.)
2. Zhouye Gu, Jianhua Zheng, and Nam Ling, “3D-CE5.h related: On DMM Simplification,” JCT3V-E0242, adopted at the *5th Meeting of Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11*, Vienna, Austria, July 27 – August 2, 2013.  
(The method was adopted into the 3D-HEVC video coding international standard – including the 3D-HEVC text document JCT3V-E1001 and the *3D-HEVC reference software HTM 8.0* onwards. Our method provides simplified solutions for DMM4 (depth modeling mode 4) mode to remove division in depth wedgelet pattern derivation.)

### (2) INFORMATIVE CONTRIBUTIONS ADOPTED:

3. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, “Fast Intra SDC Coding for 3D-HEVC Intra Coding,” JCT3V-I0123, adopted at the *9th Meeting of Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11*, Sapporo, Japan, July 3 – 9, 2014.  
(The method was adopted into the 3D-HEVC video coding international standard – including the *3D-HEVC reference software HTM 12.0* onwards. Our method speeds up 3D-HEVC depth intra coding.)
4. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, “VSD Bugfix and Improvement,” JCT3V-G0163, adopted at the *7th Meeting of Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11*, San Jose, California, U.S.A, January 9 – 17, 2014.  
(The method was adopted into the 3D-HEVC video coding international standard – including the *3D-HEVC reference software HTM 10.0* onwards. Our method corrects view synthesis distortion calculation in 3D-HEVC.)
5. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, “3D-CE5.h related: Fast Intra Prediction Mode Selection for Intra Depth Map Coding,” JCT3V-E0238, adopted at the *5th Meeting of Joint Collaborative Team on 3D Video Coding Extension Development (JCT-3V) of ITU-T SG 16 WP 3 and ISO/IEC JTC 1/SC 29/WG 11*, Vienna, Austria, July 27 – August 2, 2013.  
(The method was adopted into the 3D-HEVC video coding international standard – including the *3D-HEVC reference software HTM 8.0* onwards. Our method simplifies the mode decision process on 3D-HEVC depth intra coding.)
6. 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.)
7. 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 in the H.264 reference software.)

## PATENTS

1. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Improved Reference Pixel Selection and Filtering for Intra Coding of Depth Map," U.S. Patent filed (application no. 14/515,930) and PCT Application filed (application no. PCT/SU2014/060873) on October 16, 2014. (Note: two Provisional U.S. Patents filed - application no. 61/892,342 on October 17, 2013 and application no. 61/923,124 on January 2, 2014.)
2. Jianhua Zheng, Zhouye Gu, Philipp Zhang, and Nam Ling, "System and Method for Depth Map Coding for Smooth Depth Map Area," Provisional U.S. Patent filed (application no. 62/063,305) on October 13, 2014.
3. Lingzhi Liu, Guichun Li, Nam Ling, Jianhua Zheng, Philipp Zhang, and Li Song, "Reference Pixel Reduction for Intra LM Prediction," U.S. Patent filed (application no. 13/745,134) and PCT Application filed (application no. PCT/US2013/022156) on January 18, 2013; European Patent (application no. EP 13 702 692.8) filed September 2014. (Note: Provisional U.S. Patent filed (application no. 61/588,359) on January 19, 2012.)
4. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Method and Apparatus of Derivation for a Binary Partition Pattern," U.S. Patent filed (application no. 14/335,403) on July 18, 2014. (Note: Provisional U.S. Patent (application no. 61/866,941) was filed on August 16, 2013.)
5. Zhouye Gu, Jianhua Zheng, Nam Ling, and Chen-Xiong Zhang, "Method of Intra SDC Coding," Provisional U.S. Patent filed (application no. 62/017,625) on June 26, 2014. (Note: A second related provisional application no. 62/027,386 was filed in-house and linked to the first one, on July 22, 2014.)
6. Zhouye Gu, Jianhua Zheng, Nam Ling, and Chen-Xiong Zhang, "Method of Depth Based Block Partitioning," Provisional U.S. Patent filed (application no. 62/017,637) on June 26, 2014.
7. Jianhua Zheng, Philipp Zhang, Zhouye Gu, and Nam Ling, "Method and Apparatus of Depth Prediction Mode Selection," U.S. Patent filed (application no. 14/253,465) on April 15, 2014. (Note: Provisional U.S. Patent (application no. 61/812,124) was filed on April 16, 2013.)
8. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Reference Pixels Selection for Illumination Compensation," Provisional U.S. Patent filed (application no. 61/968,980) on March 21, 2014.
9. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "Method and Apparatus of Depth Prediction Mode Selection," U.S. Patent filed (application no. 14/152,904) on January 10, 2014. (Note: Provisional U.S. Patent (application no. 61/751,589) was filed on January 11, 2013.)
10. Zhouye Gu, Jianhua Zheng, Nam Ling, and Philipp Zhang, "System and Method for Estimating View Synthesis Distortion," Provisional U.S. Patent filed (application no. 61/923,500) on January 3, 2014.
11. Lingzhi Liu, Xiang Li, Jianhua Zheng, Nam Ling, and Chen-Xiong Zhang, "Predictive Adaptive Scan Ordering for Video Coding," U.S. Patent granted (Patent Number 8,477,845), issued on July 2, 2013. (U.S. Patent filed (application no. 12/905,872) on October 15, 2010. Provisional U.S. Patent filed (application no. 61/252,443) on October 16, 2009.)
12. Guichun Li, Lingzhi Liu, Nam Ling, Jianhua Zheng, Philipp Zhang, and Li Song, "Simplification of Mode Dependent Intra Smoothing," U.S. Patent filed (application no. 13/744,827) on January 18, 2013. (Note: Provisional U.S. Patent (application no. 61/588,355) was filed on January 19, 2012.)
13. Guichun Li, Lingzhi Liu, Changcai Lai, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Mode Dependent Intra Smoothing Filter Table Mapping Methods for Non-Square Prediction Units," U.S. Patent filed, May/June 2012. (Note: Provisional U.S. Patent filed (application no. 61/497,173) on June 15, 2011.)
14. Guichun Li, Lingzhi Liu, Changcai Lai, Nam Ling, Jianhua Zheng, and Philipp Zhang, "Simplified Bilateral Intra Smoothing Filter," U.S. Patent filed, June 2012. (Note: Provisional U.S. Patent filed (application no. 61/503,415) on June 30, 2011.)

15. Lingzhi Liu, Guichun Li, Nam Ling, Jianhua Zheng, and Chengxiong Zhang, "Using Multiple Prediction Sets to Encode Extended Unified Directional Intra Mode Numbers for Robustness," U.S. Patent filed, March 2012. (Note: Provisional U.S. Patent filed (application no. 61/451,432) on March 10, 2011.)
16. Lingzhi Liu, Guichun Li, Nam Ling, Jianhua Zheng, and Chengxiong Zhang, "Improved Multiple Predictor Set for Intra Coding with Intra Mode Prediction," U.S. Patent filed, September 2011. (Note: Provisional U.S. Patent filed (application no. 61/388,485) on September 30, 2010.)

## MEMORANDA OF UNDERSTANDING (MOU)

1. Initiated the effort to collaborate with Shanghai Jiao Tong University (SJTU), China. A memorandum of understanding (MOU) between the two Universities (Santa Clara and SJTU) was later signed on August 31, 2009, a team effort led by the School Graduate Studies office.
  - Hired a Visiting Associate Professor from SJTU for one year, Oct 2011 – Sep 2012.
2. Spearheaded the process that led to the signing of memorandum of understanding on R & D collaboration (MPEG and DTV technologies) between the 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 (PI), "Research on 3D Extension for HEVC Standardization," awarded **Huawei Technologies grant**, US\$200,440, performance period: June 20, 2014 – June 19, 2016.
2. Nam Ling (PI), "Research on 3D Extension for HEVC Standardization," awarded **Huawei Technologies grant**, US\$34,000 (achievement award – reward gift), performance period: June 20, 2014 – June 19, 2016.
3. Nam Ling (PI), "3D Video Coding and 3D-HEVC," awarded **Santa Clara University School of Engineering Research Grant**, US\$13,875, March 5, 2014, (performance period: July 2014 – June 2015).
4. Nam Ling (PI) and Zhouye Gu (Co-PI), "Depth and Mode Coding for HEVC-3D," awarded **Huawei Technologies grant**, US\$100,220, performance period: June 20, 2013 – June 19, 2014.
5. Nam Ling (PI), "HEVC 3DV and SVC Extensions," awarded **Santa Clara University School of Engineering Research Grant**, US\$31,849, January 24, 2013 (performance period: January 2013 – June 2014).
6. Nam Ling (PI), "Coding of Depth in 3D Video," awarded **Santa Clara University School of Engineering Research Grant**, US\$15,511, June 4, 2012 (performance period: July 2012 – June 2013).
7. Nam Ling (PI), "High Efficiency Video Coding – Next Step," awarded **Huawei Technologies grant**, US\$70,000, performance period: April 16, 2012 – April 15, 2013.
8. Nam Ling (PI), "Intra Prediction Model for Video Coding," awarded **Huawei Technologies grant**, US\$70,000, performance period: March 1, 2011 – December 31, 2012.
9. Nam Ling (PI), "Adaptive Bit-Rate Control for Wavelet-Based Video Coding," awarded **Droplet Technology, Inc. grant**, US\$125,500, performance period: June 1, 2010 – July 31, 2012.
10. Nam Ling (PI), "Intra Prediction for Next Generation Video Compression," awarded **Santa Clara University School of Engineering Research Grant**, US\$23,122, performance period: February/March 2011 – June 30, 2012.
11. Nam Ling (PI), "Project Astra: 3-D Visualization of a Virtual Universe," awarded **Santa Clara University School of Engineering Kuehler Undergraduate Research Grant**, US\$3,052, performance period: Summer 2011.
12. Nam Ling (PI), "High-Performance Video Codec System," awarded **Santa Clara University Technology Innovation Grant**, US\$12,304, performance period: January 2011 – June 30, 2011.

13. Nam Ling (PI), "Next Generation Video Coding," awarded **Santa Clara University School of Engineering Research Grant**, US\$10,371, performance period: January 2010 – June 30, 2011.
14. Nam Ling (PI), "3-D Graphics and Video," awarded **Santa Clara University School of Engineering Kuehler Undergraduate Research Grant**, US\$2,420, performance period: Summer 2010.
15. Nam Ling (PI), "Predictive and Decoder-Derived Video Coding Model," awarded **Huawei Technologies grant**, US\$70,000, performance period: July 1, 2009 – June 30, 2010.
16. Nam Ling (PI), "A Statistical Motion Vector Coding Model," awarded **Huawei Technologies grant**, US\$70,000, performance period: August 16, 2007 – August 15, 2008.
17. Nam Ling (PI), "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, 2007.
18. Nam Ling (PI), "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.
19. Nam Ling (PI), "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.
20. Nam Ling (PI), 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.
21. Nam Ling (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.
22. Nam Ling (PI), "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.
23. Nam Ling (PI), "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.
24. Nam Ling (PI), "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.
25. Nam Ling (PI), "An Application Framework for Distributed Computing Environment," awarded **Santa Clara University IBM Research Grant**, US\$5,000, performance period: May 1, 1993 - February 10, 1995.
26. Nam Ling (PI), "A Formal Verifier for Systolic Array Designs," awarded **Santa Clara University 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.
27. Nam Ling (PI), "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.
28. Nam Ling (PI), "Automatic Formal Verification of Systolic Arrays," awarded **Santa Clara University IBM Faculty Research Grant**, US\$3,818, performance period: May 7, 1990 - June 30, 1991.

**(2) TEACHING GRANTS:**

29. Nam Ling and Weijia Shang, "Video Processing Project for Undergraduates," awarded **Santa Clara University Funds for Technology Innovation**, US\$9,502, performance period: February 15, 2010 – May 15, 2010.



30. Nam Ling and Weijia Shang, "A New Computer Hardware Design Methodology for Undergraduates," awarded **Santa Clara University 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 SUPERVISING EXPERIENCE**

**(1) COURSES TAUGHT:**

Different Graduate Level Courses Taught (1990 - present):

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

Different Undergraduate Level Courses Taught (1989 - present):

10. Multimedia Data Compression (Senior Level Current Topics).
11. Computer Architecture (Senior Level).
12. Introduction to Microprocessors (Senior/Junior Level).
13. Digital System Design and Analysis / Logic Design (Junior/Sophomore Level).
14. Machine Organization and Programming (Sophomore Level).
15. 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 1986.
- Computer Engineering (Freshmen Level), Spring 1986.

**(2) CURRICULUM AND LABORATORY DEVELOPMENT:**

1. Worked with Electrical Engineering Department to revise circuit course sequence to enable the inclusion of principles of programming languages as a required course for B.S. in Computer Science & Engineering, 2011.
2. Created graduate courses in intellectual property issues, global issues, and multicultural and gender issues, for the School of Engineering, 2002 - 2007.
3. Created a new area of specialization (Bioinformatics) and the corresponding graduate courses in the School of Engineering, 2004.
4. Created and developed the Bioinformatics track for track-based M.S. curriculum in Computer Engineering, 2004.
5. 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.
6. Jointly developed a hardware description language based design lab for computer architecture course, 1997 – 98.
7. Led a committee that developed the curriculum requirement for Advanced Studies in High-Performance Computing certificate program, 1994 - 95.
8. Jointly developed the new curriculum requirements for M.S. in Computer Engineering, 1993 - 94.
9. Involved in the Computer Engineering undergraduate curriculum revision, 1993 - 94.
10. 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 Taught:

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

#### Laboratory Development:

17. Established and developed the Multimedia Compression Lab., 1997 – present.
18. 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:**

- About 23 Ph.D. students, one Engineer’s degree student, and more than 70 M.S. students, 1990 – present. (Also served as advisors for many undergraduate students in their senior design projects and undergrad research: Several teams won School level awards; one was selected Honorable Mention in Computing Research Association’s Outstanding Undergraduate Researcher Award; some published papers in top conferences.)
- Ph.D. students graduated:
  - Jun Zhang, dissertation title: “Context Adaptive Rate-Distortion Optimization in Video Coding,” graduated June 2010.
  - 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.

#### **(4) SERVED AS SUPERVISORS FOR:**

- About 10 Research Assistants (graduate students), 1990 – present.
- Full-time researchers (salary paid by Santa Clara University School of Engineering or Ling’s grants):
  - Zhouye Gu, Postdoctoral Research Fellow, term: November 1, 2013 – October 31, 2014.
  - Zhouye Gu, Visiting Research Scholar, term: November 1, 2012 – October 31, 2013.
  - Li Song, Visiting Associate Professor, term: October 1, 2011 – September 30, 2012.
- Served as hosts to several visiting faculty (from other universities), 1990 – present.

### **PROFESSIONAL ACTIVITIES AND UNIVERSITY COMMITTEES**

#### **(1) MAJOR PROFESSIONAL LEADERSHIP POSITIONS:**

1. **General Chair**, 2015 IEEE Workshop on Signal Processing Systems (SiPS), Hangzhou, China, October 14 - 16, 2015.
2. **General Co-Chair**, 8th International Conference on Ubi-Media Computing (Umedia), Colombo, Sri Lanka, August 24 – 25, 2015.

3. **General Co-Chair**, 7th International Conference on Ubi-Media Computing (Umedia), Ulaanbaatar, Mongolia, July 12 – 14, 2014.
  4. **General Co-Chair**, 2nd International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, January 21 – 23, 2014.
  5. **Technical Program Co-Chair**, 2013 IEEE Visual Communications and Image Processing Conference (VCIP), Kuching, Sarawak, Malaysia, November 17 - 20, 2013.
  6. **General Chair**, 2013 IEEE International Conference on Multimedia and Expo (ICME), San Jose, California, USA, July 15 – 19, 2013. (ICME is the flagship conference on multimedia research for the IEEE and is sponsored by four of the largest IEEE societies – Computer, Communications, Signal Processing, and Circuits and Systems.)
  7. **Technical Program Co-Chair**, 2010 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), Singapore, December 14 – 17, 2010.
  8. **Technical Program Co-Chair**, 2010 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Kuala Lumpur, Malaysia, December 6 – 9, 2010.
  9. **General Co-Chair**, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
  10. **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).
  11. **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, ISCAS 2007 has 1,826 papers submitted and an attendance of about 1,300.)
  12. **Program Co-Chair**, 2007 IEEE Workshop on Signal Processing Systems (SiPS), Shanghai, China, October 17 – 19, 2007.
  13. **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.
  14. **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.
  15. **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.
  16. **Program Chair**, Third International Workshop on Digital and Computational Video (DCV), Clearwater Beach, Florida, USA, November 14-15, 2002.
  17. **Program Co-Chair**, 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
  18. **General Chair**, IEEE Hot Chips Symposium VII, Stanford University, Stanford, California, USA, August 13-15, 1995. (Hot Chips VII has a total attendance of about 1,000 and reported by media such as World Journal, EE Times, and San Jose Mercury News.)
  19. **Chair**, IEEE Computer Society Technical Committee on Microprocessors and Microcomputers, 1993 - 1995.
  20. **Vice Chair**, IEEE Hot Chips Symposium VI, Stanford University, Stanford, California, USA, August 14-16, 1994.
- (2) **EDITORSHIPS IN MAJOR JOURNALS:**
21. **Associate Editor**, Human-centric Computing and Information Sciences, Springer, 2014 – present.

22. **Associate Editor**, Multidimensional Systems and Signal Processing: An International Journal (MSSP), Springer, 2012 – 2015.
23. **Guest Editor**, IEEE Journal of Selected Topics in Signal Processing (Special Issue on Video Coding: HEVC and Beyond), Vol. 7 No. 6, December 2013.
24. **Guest Co-Editor**, Journal of Signal Processing Systems for Signal, Image, and Video Technology (Special Issue: SoC for Multimedia Networking), Vol. 60, No. 3, Springer, September 2010. (Online version published May 2009).
25. **Editor of the Editorial Board**, Journal of Internet Technology, 2004 – 2009, 2011 - present.
26. **Member of the Editorial Board**, International Journal of Internet Protocol Technology, Inderscience Publishers, 2005 – 2008.
27. **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.
28. **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:**

29. **APSIPA Distinguished Lecturer**, January 2014 – December 2015.
30. **IEEE Distinguished Lecturer** (IEEE Circuits and Systems Society), January 2007 – December 2008.
31. **IEEE Distinguished Lecturer** (IEEE Circuits and Systems Society), January 2002 – December 2003.

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

32. **Technical Committee Representative to the ICME Steering Committee** - representative of the IEEE Circuits and Systems Society Multimedia Systems and Applications Technical Committee to the IEEE International Conference on Multimedia and Expo (ICME) Steering Committee, term: January 1, 2014 – December 31, 2015.
33. **International Advisory Committee Member**, The 10<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Auckland, New Zealand, June 15 - 17, 2015.
34. **America Liaison**, 2014 IEEE International Workshop on Multimedia Signal Processing (MMSp), Jakarta, Indonesia, September 22 – 24, 2014.
35. **International Advisory Committee Member**, The 9<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Hangzhou, China, June 9 – 11, 2014.
36. **International Advisory Committee Member**, The 9<sup>th</sup> International Conference on Information, Communications and Signal Processing (ICICS), Tainan, Taiwan, December 10 – 13, 2013.
37. **International Advisory Committee Member**, The 8<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Melbourne, Australia, June 19 – 21, 2013.
38. **International Advisory Committee Member**, The 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Singapore, July 18 - 20, 2012.
39. **Best Paper Award Committee Member**, The 7<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Singapore, July 18 - 20, 2012.
40. **Tutorial Co-Chair**, 2012 IEEE International Symposium on Circuits and Systems (ISCAS), Seoul, South Korea, May 20 – 23, 2012.

41. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 12 - 15, 2012.
42. **Technical Program Committee Member**, 2011 International Conference on Advanced Intelligence and Awareness Internet (AIAI), Shenzhen, China, October 28 -30, 2011.
43. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 12, 2011.
44. **Publicity Co-Chair**, 2010 IEEE International Symposium on Multimedia (ISM), Taichung, Taiwan, December 13 – 15, 2010.
45. **Technical Program Committee Member**, 2010 IEEE Workshop on Signal Processing Systems (SiPS), San Francisco Bay Area, California, USA, October 6 – 8, 2010.
46. **Technical Program Committee Member**, 2010 IEEE International Conference on Multimedia and Expo (ICME), Singapore, July 19 – 23, 2010.
47. **Technical Program Committee Member**, SPIE Visual Communications and Image Processing 2010 (VCIP), Huang Shan, China, July 11 – 14, 2010.
48. **International Advisory Committee Member**, The 5<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Taichung, Taiwan, June 15 – 17, 2010.
49. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 13, 2010.
50. **Organizing Committee Member (Registration)**, 2009 IEEE International Conference on Image Processing (ICIP), Cairo, Egypt, November 7 – 11, 2009.
51. **Technical Program Committee Member**, 2009 IEEE Workshop on Signal Processing Systems (SiPS), Tampere, Finland, October 7 - 9, 2009.
52. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 10 - 14, 2009.
53. **Steering Committee Member**, IEEE International Symposium on Circuits and Systems (ISCAS), 2008.
54. **Technical Program Committee Member**, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 - 28, 2008.
55. **Technical Program Committee Member**, 2008 IEEE Workshop on Signal Processing Systems (SiPS), Washington, D.C., USA, October 8 - 10, 2008.
56. **Technical Program Committee Member**, IEEE International Conference on Circuits and Systems for Communications (ICCSC), Shanghai, China, May 26 - 28, 2008.
57. **Review Committee Member**, 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
58. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 13, 2008.
59. **Technical Program Committee Member**, Multimedia Compression and Optimization Track, Pacific-Rim Conference on Multimedia (PCM), Hong Kong, China, December 11 – 14, 2007.
60. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 10 - 14, 2007.

61. **Technical Program Committee Member**, 2006 IEEE Workshop on Signal Processing Systems (SiPS), Banff, Alberta, Canada, October 2 – 4, 2006.
62. **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.
63. **Program Committee Member**, Picture Coding Symposium 2006 (PCS), Beijing, China, April 24 – 26, 2006.
64. **Technical Program Committee Member**, IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
65. **Technical Program Committee Member**, 2005 International Symposium on Intelligent Signal Processing and Communications Systems, Hong Kong, China, December 13 – 16, 2005.
66. **International Program Committee Member**, Fifth International Conference on Information, Communications and Signal Processing, Bangkok, Thailand, December 6 – 9, 2005.
67. **Technical Program Committee Member**, 2005 IEEE Workshop on Signal Processing Systems (SiPS), Athens, Greece, November 2 – 4, 2005.
68. **Technical Program Committee Member and Review Committee Member**, 2005 IEEE International Symposium on Circuits and Systems (ISCAS), Kobe, Japan, May 23 - 26, 2005.
69. **Technical Program Committee Member**, 2004 IEEE Workshop on Signal Processing Systems (SiPS), Austin, Texas, U.S.A, October 13 – 15, 2004.
70. **Technical Program Committee Member and Review Committee Member**, 2004 IEEE International Symposium on Circuits and Systems (ISCAS), Vancouver, Canada, May 23 - 26, 2004.
71. **Program Committee Member**, 2003 IEEE Workshop on Signal Processing Systems (SiPS), Seoul, Korea, August 27 - 29, 2003.
72. **Review Committee Member**, 2003 IEEE International Symposium on Circuits and Systems (ISCAS), Bangkok, Thailand, May 25 - 28, 2003.
73. **Publication Co-Chair**, Workshop and Exhibition on MPEG-4, San Jose, California, USA, June 25 - 27, 2002.
74. **Technical Program Committee Member**, 2002 IEEE International Symposium on Circuits and Systems (ISCAS), Scottsdale, Arizona, USA, May 26-29, 2002.
75. **International Program Committee Member**, Third International Conference on Information, Communications and Signal Processing, Singapore, October 15 – 18, 2001.
76. **Program Committee Member**, 2001 IEEE Workshop on Signal Processing Systems (SiPS), Antwerp, Belgium, September 26-28, 2001.
77. **Publication Co-Chair**, Workshop and Exhibition on MPEG-4, San Jose, California, USA, June 18 – 20, 2001.
78. **Technical Program Committee Member**, 2001 IEEE International Symposium on Circuits and Systems (ISCAS), Sydney, Australia, May 6-9, 2001.
79. **Chair, Student Paper Contest Panel**, 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
80. **Technical Program Committee Member**, 2000 IEEE International Symposium on Circuits and Systems (ISCAS), Geneva, Switzerland, May 28-31, 2000.
81. **Technical Program Committee Member**, 1999 IEEE International Symposium on Circuits and Systems (ISCAS), Orlando, Florida, USA, May 30 – June 2, 1999.

- 82. **Program Committee Member**, 8th Great Lakes Symposium on VLSI, Lafayette, Louisiana, USA, February 19-21, 1998.
- 83. **Member (at large)**, Organizing Committee, IEEE Hot Chips Symposium IX, Stanford University, Stanford, California, USA, August 24-26, 1997.
- 84. **Member (at large)**, Organizing Committee, IEEE Hot Chips Symposium VIII, Stanford University, Stanford, California, USA, August 18-20, 1996.
- 85. **Technical Program Committee Member**, 37th Midwest Symposium on Circuits and Systems, Lafayette, Louisiana, USA, August 3 -5, 1994.
- 86. **Publication Chair**, IEEE Hot Chips Symposium V, Stanford University, Stanford, California, USA, August 8-10, 1993.
- 87. **Digest Chair**, IEEE Hot Interconnects Symposium, Stanford University, Stanford, California, USA, August 5-7, 1993.
- 88. **Publication Chair**, IEEE Hot Chips Symposium IV, Stanford University, Stanford, California, USA, August 9-11, 1992.
- 89. **Publication Chair**, IEEE Hot Chips Symposium III, Stanford University, Stanford, California, USA, August 26-27, 1991.
- 90. **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:**

- 91. **Session Chair**, Session on “Classification and Recommendation,” 2014 IEEE International Workshop on Multimedia Signal Processing (MMSP), Jakarta, Indonesia, September 22 – 24, 2014.
- 92. **Keynote Session Chair**, “Perception Inspired Video Processing: From Digital Camera to Ubiquitous Projection,” 2nd International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, January 21 – 23, 2014.
- 93. **Session Chair**, All Sessions in Day 3 of the Workshop, 2nd International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, January 21 – 23, 2014.
- 94. **Keynote Session Chair**, Keynote Speech entitled “Recent Developments in Visual Saliency Detection and Salient Object Segmentation,” 2013 IEEE Visual Communications and Image Processing Conference (VCIP), Kuching, Sarawak, Malaysia, November 17 - 20, 2013.
- 95. **Session Chair**, Session on “Image Processing Techniques & SS on Perception-Driven Image and Video Processing for Visual Communication Systems,” 2013 IEEE Visual Communications and Image Processing Conference (VCIP), Kuching, Sarawak, Malaysia, November 17 - 20, 2013.
- 96. **Keynote Session Chair**, Keynote Speech entitled “Advances of Media Technology in Modern Computing,” 2013 IEEE International Conference on Multimedia and Expo (ICME), San Jose, California, U.S.A, July 15 – 19, 2013.
- 97. **Session Chair**, Session on “High Efficiency Video Coding (I),” 2012 IEEE Visual Communications and Image Processing Conference (VCIP), San Diego, California, U.S.A, November 27 – 30, 2012.
- 98. **Keynote Session Chair**, Keynote Speech entitled “Robots and the Human,” 2010 Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC), Singapore, December 14 – 17, 2010.
- 99. **Keynote Sessions Chair**, all Keynote Speeches for Day 1, 2010 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS), Kuala Lumpur, Malaysia, December 6 – 9, 2010.

- 100.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.
- 101.Session Chair**, Session on “Transcoding,” 2009 IEEE International Conference on Image Processing (ICIP), Cairo, Egypt, November 7 – 11, 2009.
- 102.Session Chair**, Session on “DSP Implementations I,” 2009 IEEE Workshop on Signal Processing Systems (SiPS), Tampere, Finland, October 7 - 9, 2009.
- 103.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.
- 104.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.
- 105.Session Chair**, All Sessions in Day 3 of the Workshop, 1st International Workshop on Video Coding and Video Processing (VCVP), Shenzhen, China, November 26 – 28, 2008.
- 106.Session Co-Chair**, Session on “Wireless Communications Systems,” 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
- 107.Session Co-Chair**, Session on “Encoder Optimization,” 2008 IEEE International Symposium on Circuits and Systems (ISCAS), Seattle, Washington, USA, May 18 - 21, 2008.
- 108.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.
- 109.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.
- 110.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.
- 111.Session Chair**, Session on “Coding and Compression,” 2006 IEEE Workshop on Signal Processing Systems (SiPS), Banff, Alberta, Canada, October 2 – 4, 2006.
- 112.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.
- 113.Session Co-Chair**, Session on “Moving Picture Coding,” Picture Coding Symposium 2006 (PCS), Beijing, China, April 24 – 26, 2006.
- 114.Session Chair**, Session on “Mobile Multimedia,” IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
- 115.Session Co-Chair**, Session on “H.264 Encoding,” IEEE International Conference on Consumer Electronics (ICCE), Las Vegas, Nevada, USA, January 9 - 11, 2006.
- 116.Session Chair**, Session on “Video Coding,” 2005 IEEE Workshop on Signal Processing Systems (SiPS), Athens, Greece, November 2 – 4, 2005.
- 117.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.
- 118.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.



- 119.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.
- 120.Session Chair**, Session on “JPEG2000 Implementations,” 2005 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Philadelphia, Pennsylvania, USA, March 18 – 23, 2005.
- 121.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.
- 122.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.
- 123.Session Chair**, Session on “Receivers Architecture and Design,” 2004 IEEE International Symposium on Circuits and Systems (ISCAS’2004), Vancouver, Canada, May 23 - 26, 2004.
- 124.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.
- 125.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.
- 126.Session Chair**, Session on “Video Architectures,” 2003 IEEE Workshop on Signal Processing Systems (SiPS), Seoul, Korea, August 27 - 29, 2003.
- 127.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.
- 128.Session Chair**, Session on “Video,” Workshop and Exhibition on MPEG-4 (WEMP4’2002), San Jose, California, USA, June 25 - 27, 2002.
- 129.Session Chair**, Session on “Video Segmentation,” 2002 IEEE International Symposium on Circuits and Systems (ISCAS’2002), Scottsdale, Arizona, USA, May 26-29, 2002.
- 130.Session Chair**, Session on “Communication Circuits / Implementation,” 2002 IEEE International Symposium on Circuits and Systems (ISCAS’2002), Scottsdale, Arizona, USA, May 26-29, 2002.
- 131.Session Chair**, Session on “Video Codecs,” 2001 IEEE Workshop on Signal Processing Systems (SiPS), Antwerp, Belgium, September 26-28, 2001.
- 132.Session Chair**, Session on “Decoder Algorithms and Architectures,” 2001 IEEE International Symposium on Circuits and Systems (ISCAS’2001), Sydney, Australia, May 6-9, 2001.
- 133.Session Chair**, Session on “Student Paper Contest,” 2000 IEEE Workshop on Signal Processing Systems (SiPS), Lafayette, Louisiana, USA, October 11-13, 2000.
- 134.Session Chair**, Session on “Communication Systems and Circuits,” 2000 IEEE International Symposium on Circuits and Systems (ISCAS’2000), Geneva, Switzerland, May 28-31, 2000.
- 135.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.
- 136.Session Chair**, Session on “Novel and Emerging Circuits,” 8<sup>th</sup> Great Lakes Symposium on VLSI, Lafayette, Louisiana, USA, February 19-21, 1998.
- 137.Session Organizer and Session Chair**, Special Session on “Multimedia Architectures,” 37th Midwest Symposium on Circuits and Systems, Lafayette, Louisiana, USA, August 3 -5, 1994.
- 138.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.

**139.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.

**140.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) MEMBERSHIP POSITIONS IN SOCIETY TECHNICAL COMMITTEES AND BOARDS:**

**141.Member**, APSIPA Membership Board, 2014 – present.

**142.Member of Advisory Board**, IEEE Signal Processing Society Design and Implementation of Signal Processing Systems Technical Committee, 2011 – present.

**143.Committee Member**, IEEE Circuits and Systems Society Multimedia Systems and Applications Technical Committee, May 2008 – present.

**144.Emeritus Member**, IEEE Circuits and Systems Society VLSI Systems and Applications Technical Committee, 2005 – present.

**145.Committee Member**, IEEE Circuits and Systems Society Circuits and Systems for Communications Technical Committee, May 2004 – present.

**146.Committee Member**, IEEE Circuits and Systems Society Technical Committee on Visual Signal Processing and Communications, 1999 – present.

**147.Committee Member**, IEEE Signal Processing Society Design and Implementation of Signal Processing Systems Technical Committee, 2004 - 2010.

**148.Committee Member**, IEEE Computer Society Technical Committee on Microprocessors and Microcomputers, 1992 - 1997.

**149.Committee Member**, IEEE Circuits and Systems Society VLSI Systems and Applications Technical Committee, 1990 – 2005.

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

**150.External Examiner** (for doctoral student theses and dissertations), School of EEE, Nanyang Technological University, Singapore, 2011 and 2012.

**151.External Referee** (assessing faculty tenure and promotion), School of Computer Engineering, Nanyang Technological University, Singapore, 2012.

**152.External Referee** (assessing faculty tenure and promotion), School of EEE, Nanyang Technological University, Singapore, 2008, 2010, 2011.

**153.External Referee** (evaluating faculty tenure and promotion), Department of Electrical and Computer Engineering, Lehigh University, Bethlehem, Pennsylvania, USA, 2010.

**154.Member**, Integrated Undergraduate Engineering Advisory Committee, University of Hawaii at Hilo, Hilo, Hawaii, USA, September 2009 – 2010.

**155.External Referee** (evaluating faculty promotion), Department of Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, USA, 2009.

**156.Judge**, The 15<sup>th</sup> Annual Outstanding Chinese Media Awards, North California Chinese Media Association (NCCMA), California, USA, 2009.

**157.External Examiner**, Department of Computer Science & Engineering, the Hong Kong University of Science and Technology, Hong Kong, China, 2009.

**158.External Assessor** (assessing faculty tenure), School of EEE, Nanyang Technological University, Singapore, 2007.

**159.Member**, Board of Directors, Chinese Institute of Engineers (San Francisco Bay Area Chapter), USA, February 2004 – March 2006.

**160.**Contributed to the 4<sup>th</sup> Industrial Technology Research Institute (ITRI) (Taiwan) Elite Researchers Program: “Meet the Best Minds,” May 2005.

**161.External Examiner** (for graduate student theses and dissertations), School of EEE, Nanyang Technological University, Singapore, 2000 – 2001, 2004 - 2005.

**162.External Examiner** (for graduate student theses and dissertations), Faculty of Engineering, Multimedia University, Malaysia, 2002 – 2003.

**163.Member**, Singapore Digital TV Technical Committee, Singapore, March 1998 – August 1998.

#### **164.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).

#### **165.Reviewers for journals**

- Multidimensional Systems and Signal Processing: An International Journal (Springer) (2012, 2014).
  - 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, 2011).
  - 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.

#### **166.Reviewers for conferences**

- IEEE Latin American Symposium on Circuits and Systems (2013).
- IEEE International Conference on Image Processing (2009, 2012).
- IEEE International Conference on Multimedia and Expo (2010).
- IEEE Asia Pacific Conference on Circuits and Systems (1992, 2010).
- Picture Coding Symposium (PCS) (2006).
- Visual Communications and Image Processing (VCIP) (2005, 2010).
- IEEE International Conference on Consumer Electronics (2006, 2010, 2011).
- 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, 2014).
- 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).

- 3<sup>rd</sup> International Conference on Computational Intelligence and Multimedia Applications (1999).
  - 8<sup>th</sup> 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).
  - Hawaii International Conference on System Sciences (1992).
- and more.

**(8) MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS:**

- 167.Fellow**, The Institution of Engineering and Technology (IET), 2011 – present.
- 168.Fellow**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 2008 – present.
- 169.Member**, Asia-Pacific Signal and Information Processing Association (APSIPA), 2013.
- 170.Senior Member**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 1999 – 2007.
- 171.Member**, The Institute of Electrical and Electronics Engineers, Inc. (IEEE), 1990 - 1999.
- 172.Professional Member**, American Society for Engineering Education (ASEE), 2002 – 2006.
- 173.Member**, The International Society for Optical Engineering, (SPIE), 2004 – 2005.
- 174.Professional Member**, The Association for Computing Machinery (ACM), 1990 - 2004.

**(9) SERVICE IN UNIVERSITY COMMITTEES:**

- 175.Member**, Natural Science Faculty Core Committee, Santa Clara University, 2014 - 2017.
- 176.Member**, Faculty Development Advisory Council, Santa Clara University, 2007 – present.
- 177.Member**, Graduate Program Leadership Council, School of Engineering, Santa Clara University, 2007 – present.
- 178.Affiliated Faculty**, Department of Bioengineering, Santa Clara University, 2011 – present.
- 179.Chair**, Search Committee for Academic Year Lecturer in Computer Engineering, Department of Computer Engineering, Santa Clara University, 2009, 2014.
- 180.Member**, School of Engineering Committee on Rank & Tenure Document Revision, Santa Clara University, Fall 2012.
- 181.Member**, Special Taskforce on Patents and Inventions, Santa Clara University, 2008 – 2010.
- 182.Member**, Search Committee for Tenure-Track Faculty in Computer Engineering, Department of Computer Engineering, Santa Clara University, 2010.
- 183.Member**, Steering Committee, Center for Nanostructure, Santa Clara University, 2003 - 2007.
- 184.Committee Member**, Search Committee for the New Dean of the School of Engineering, Santa Clara University, 2001 – 2002.
- 185.Member**, University Faculty Judicial Board, Santa Clara University, 2000 – 2001, 2006 – 2007.
- 186.Committee Member**, School of Engineering Rank & Tenure Committee, Santa Clara University, 1996 – 1999, 2001 – 2002.
- 187.Committee Member**, School of Engineering Dean’s Evaluation Committee, Santa Clara University, 1999.

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

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

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

**191. 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.

## **HONORARY, VISITING, AND CONSULTING POSITIONS**

### **(1) PROFESSORSHIPS (LONG-TERM) AT FOREIGN UNIVERSITIES:**

1. **Visiting Professor**, Xi'an University of Posts and Telecommunications, China, October 17, 2014 - present.
2. **Outstanding Overseas Scholar**, Shanghai University of Electric Power, China, January 27, 2014 – present.
3. **Adjunct Professor**, Lanzhou Jiaotong University, China, July 8, 2013 - present.
4. **Cuiying Chair Professor**, Lanzhou University, China, June 27, 2012 – present.
5. **Guest Professor**, Shanghai Jiao Tong University, China, May 2006 – present.
6. **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) OTHER (SHORT-TERM) POSITIONS:**

7. Consulting at Xilinx, San Jose, California, USA. Provided training on video technology for engineers, September 2009.
8. Visiting Researcher, Institute for Infocomm Research (I<sup>2</sup>R), Singapore. Reviewed research activities, discussed collaborations, and delivered a seminar, January 21 – 25, 2008.
9. 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.)
10. 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.
11. Visiting Scientist/Consultant, Institute for Infocomm Research, Singapore. Worked in the area of scalable video coding and gave seminars, February 3 – March 2, 2005.
12. 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.
13. 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; delivered three talks.)
14. 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.

15. 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.
16. 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.
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, November 19 - 23, 2001.
18. 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.
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, February 19 - 23, 2001.
20. 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.
21. 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.
22. 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.
23. 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.
24. 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.
25. Consulting at Philips Semiconductors, Sunnyvale, California, USA. Provided MPEG compression training for engineers, 1995.
26. Consulting at LSI Logic Corporation, Milpitas, California, USA. Provided image and video compression training for digital video products engineers, 1994.

## **INVITED COLLOQUIA/SEMINARS, DISTINGUISHED LECTURES, AND PANELS**

### **(1) Keynote Speeches – listed in earlier section.**

### **(2) Panels and Distinguished Invited Lectures**

1. **59th Distinguished Speaker**, Cuiying Distinguished Lecture Series (Cui Ying Da Jiang Tang), Lecture title: “3D Video Coding and Our Related Research,” Lanzhou University, Lanzhou, China, April 23, 2014.
2. **Distinguished Invited Lecture Speaker**, Lecture title: “Expectations and Challenges for Next Generation Video Compression,” 5<sup>th</sup> IEEE Conference on Industrial Electronics and Applications (ICIEA), Taichung, Taiwan, June 15 – 17, 2010.
3. **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 the 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.)

4. **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.)

**(3) APSIPA Distinguished Lectures (Delivered as APSIPA Distinguished Lecturer)**

Lecture titles for 2014-2015 APSIPA Distinguished Lectures - Lecture 1: “3D Video Coding and its Related Research.”  
Lecture 2: “Research on High Efficiency Video Coding and its 3D Extension.”

5. School of Electrical & Electronic Engineering, Nanyang Technological University (NTU), Singapore, January 29, 2014.  
(Organized by INFINITUS, NTU Infocomm Center of Excellence, IEEE Circuits and Systems (CAS) Society Singapore Chapter, IEEE Industrial Electronics (IE) Society Singapore Chapter, and APSIPA.)
6. School of Electronic and Information Engineering, Shanghai University of Electric Power, Shanghai, China, January 27, 2014.  
(Organized by School of Electronic & Information Engineering (Shanghai U of Electric Power) and APSIPA.)

**(4) 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 titles 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.”

7. 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.)
8. Faculty of Engineering, Universiti Putra Malaysia (UPM), Serdang, Malaysia, July 22, 2008.  
(Invited by IEEE CAS Society Malaysia Chapter.)
9. Institute for Infocomm Research, Singapore, July 4, 2008.  
(Invited by IEEE CAS Society Singapore Chapter.)
10. Electrical Engineering Department, Indian Institute of Technology (IIT), New Delhi, India, November 23, 2007.  
(Invited by IEEE CAS Society Delhi Chapter.)
11. School of Electrical & Electronic Engineering, Nanyang Technological University, Singapore, November 19, 2007.  
(Invited by IEEE CAS Society Singapore Chapter.)
12. Simon Fraser University, Burnaby (Vancouver area), Canada, June 21, 2007.  
(Invited by IEEE CAS Society Joint Chapter of the Vancouver/Victoria Sections.)
13. 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.)
14. 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.)
15. 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.)
16. Division of Engineering, Brown University, Providence, Rhode Island, USA, August 19, 2003.  
(Invited by the Division and the IEEE Providence Section.)
17. Department of Electrical and Computer Engineering, National University of Singapore, Singapore, August 13, 2002.  
(Invited by IEEE CAS Society (Singapore Chapter) and the Department.)
18. Ajou University, Seoul, South Korea, April 22, 2002. (2 talks).  
(Invited by IEEE Seoul Section CAS Chapter and the University.)

**(5) Non-Technical Colloquia/Seminars and Panels**

19. **Panelist/Speaker**, “Seeking Acceptance, Coping with Rejection: Publishing Your Work in Scholarly Journals,” SCU Faculty Development Workshop, Santa Clara University, Santa Clara, California, USA, May 4, 2010.
20. **Alumni Speaker**, Celebration - the Golden Jubilee (50<sup>th</sup>) Anniversary of Computing at the University of Louisiana at Lafayette and the Silver Jubilee (25<sup>th</sup>) 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.)
21. **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, Taipei, Taiwan, May 25, 2009.  
(Invited by IEEE Circuits and Systems Society GOLD.)
22. **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, Taipei, Taiwan, May 25, 2009.  
(Invited by IEEE Circuits and Systems Society GOLD.)
23. **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.)
24. **Panelist**, Panel on “Fifty Ways to Promote Scholarship,” SCU Research Colloquium, Santa Clara University, Santa Clara, California, USA, February 28, 2006.  
(Invited by the Associate Provost for Faculty Development, Santa Clara University, USA.)
25. **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 the Associate Provost for Faculty Development, Santa Clara University, USA.)
26. **Panelist/Speaker**, “What do Journal Editors Really Want?” Teaching-Scholar Symposium, Santa Clara University, Santa Clara, California, USA, October 28, 2003.  
(Invited by the Associate Provost for Faculty Development, Santa Clara University, USA.)
27. **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.)
28. **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.)

#### (6) Technical Colloquia/Seminars

29. School of Engineering, University of Bridgeport, Bridgeport, Connecticut, U.S.A, March 6, 2014.
30. INFINITUS, Infocomm Center of Excellence (Nanyang Technological University), IEEE Circuits and Systems (CAS) Society Singapore Chapter, IEEE Industrial Electronics (IE) Society Singapore Chapter, Singapore, November 15, 2013.
31. School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, China, May 17, 2013.
32. IEEE CAS Society Santa Clara Valley Chapter, Santa Clara, California, U.S.A, September 26, 2011.
33. IEEE CAS Society Singapore Chapter, Center for Signal Processing, and Division of Information Engineering, School of EEE, Nanyang Technological University, Singapore, December 13, 2010.
34. Institute of Image Communication and Information Processing, Shanghai Jiao Tong University, Shanghai, China, September 8, 2010.
35. School of Electrical & Electronic Engineering (EEE), Nanyang Technological University, Singapore, July 11, 2008.
36. IEEE Signal Processing (SP) Society Santa Clara Valley Chapter and IEEE CAS Society Santa Clara Valley Section, Santa Clara, California, U.S.A, February 11, 2008.
37. Institute for Infocomm Research (Singapore), IEEE CAS Society Singapore Chapter, IEEE Industrial Electronics (IE) Society Singapore Chapter, and IEEE SP Society Singapore Chapter, Singapore, January 24, 2008.
38. Huawei Technologies, Shenzhen, China, October 21, 2007.
39. The Center for Advanced Computer Studies, University of Louisiana at Lafayette, Lafayette, Louisiana, USA, December 19, 2006.
40. 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.)
41. 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.)



42. 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.)
43. 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.)
44. Communication University of China, Beijing, China, April 29, 2006.
45. Genesis Microchip Inc., Alviso, California, U.S.A, March 17, 2006.
46. Division of Information Engineering & the Center for Signal Processing, School of Electrical & Electronic Engineering, Nanyang Technological University, the IEEE SP Singapore Chapter, and the IEEE CAS Singapore Chapter, Singapore, July 28, 2005. (2 talks).
47. Communication University of China, Beijing, China, July 12, 2005.
48. Institute of Image Communication and Information Processing, Shanghai Jiao Tong University, Shanghai, China, July 7, 2005. (2 talks).
49. Department of Electronics Engineering, National Chiao Tung University, Hsinchu, Taiwan, June 24, 2005. (2 talks).
50. Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan, June 23, 2005. (2 talks).
51. Institute for Infocomm Research, Singapore, February 17 and March 1, 2005. (2 talks).
52. Department of Computer Science and Information Engineering, Tamkang University, Tamsui, Taiwan, March 30, 2004.
53. Department of Electrical Engineering, National Dong Hwa University, Hualien, Taiwan, March 25, 26, and 29, 2004. (3 talks).  
(Invited as Distinguished Visiting Professor/Special Invited Speaker through a program sponsored by Taiwan Ministry of Education.)
54. Shannon Lecture Series (the Santa Clara Valley Chapter of the IEEE Computer Society and the Stanford Student Chapter of the IEEE, Stanford University), Stanford, California, U.S.A, March 18, 2004.
55. Institute for Infocomm Research, Singapore, February 17 and 19, 2004. (2 talks).
56. Inter-University Semiconductor Research Center, Seoul National University, Seoul, South Korea, April 23, 2002.
57. Faculty of Information Technology and Faculty of Engineering, Multimedia University, Cyberjaya, Malaysia, July 30, 2001.
58. The Center for Advanced Computer Studies (CACCS) Centennial Computing Workshop, University of Louisiana at Lafayette, Lafayette, Louisiana, USA, November 5-6, 1999.
59. Focus Seminar on DTV, Center for Signal Processing, Nanyang Technological University, Singapore, September 10, 1999.
60. Institute of Microelectronics (IME), Singapore, July 22, 1998.
61. Singapore MPEG Seminar, Singapore, June 10, 1998.
62. Medianix Semiconductor, Inc., Mountain View, California, USA, May 29, 1998.
63. Focus Seminar on DSP Applications in Multimedia Systems, Center for Signal Processing, School of EEE, Nanyang Technological University, Singapore, April 22, 1998.
64. Television Corporation of Singapore (TCS), Singapore, March 12, 1998.
65. NJR Corporation (New Japan Radio), Mountain View, California, USA, July 9, 1997.
66. 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.)
67. Institute of Electronics, Chinese Academy of Sciences, Beijing, China, June 18, 1996.  
(Invited through Beijing Association for Science and Technology Exchanges with Foreign Countries.)
68. Department of Electronic Engineering, Tsinghua University, Beijing, China, June 17, 1996.  
(Invited through Beijing Association for Science and Technology Exchanges with Foreign Countries.)
69. NJR Corporation (New Japan Radio), Mountain View, California, USA, December 18, 1995.
70. Philips Semiconductors, Sunnyvale, California, USA, February 28, 1995.
71. LSI Logic Corporation, Milpitas, California, USA, June 24, 1994.
72. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, May 2, 1994.
73. Hewlett-Packard Laboratories, Hewlett-Packard Company, Palo Alto, California, USA, September 17, 1993.
74. ASPEC Technology, Inc., Santa Clara, California, USA, April 5, 1993 and May 18, 1993.
75. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, October 19, 1992.
76. Faculty Research Seminar, Department of Electrical Engineering and Department of Computer Engineering, Santa Clara University, Santa Clara, California, USA, April 30, 1992.
77. Workshop on VLSI Research and Education, The Center for Advanced Computer Studies, University of Southwestern Louisiana, Lafayette, Louisiana, USA, April 9-10, 1992.

78. 15th Annual Meeting of the SIAM Southeastern Atlantic Section, Western Carolina University, Cullowhee, North Carolina, USA, April 12-13, 1991.
79. The Parallel Processing Connection, Sunnyvale (presentation held at Redwood City), California, USA, January 14, 1991.
80. Department of Electrical Engineering, the University of Rhode Island, Kingston, Rhode Island, USA, October 15, 1990.
81. Department of Electrical Engineering and Computer Science, Santa Clara University, Santa Clara, California, USA, February 1, 1990.
82. Department of Mathematics and Computer Science, San Jose State University, San Jose, California, USA, November 8, 1989.
83. Department of Computer Science, University of Georgia, Athens, Georgia, USA, July 6-7, 1989.
84. IBM General Technology Division, Hopewell Junction, New York, USA, June 12, 1989.
85. Philips Laboratories, North American Philips Corporation, Briarcliff Manor, New York, USA, May 24, 1989.
86. Department of Electrical and Computer Engineering, Louisiana State University, Baton Rouge, Louisiana, USA, April 11, 1989.

### **PROFESSIONAL APPEARANCES ON MEDIA**

Professional appearances on the following public media (over 45 times), 1995-present:

- Newspaper (San Francisco Bay Area, California, U.S.): World Journal, Sing Tao Daily, San Jose Mercury News, and Silicon Valley/San Jose Business Journal.
- TV (San Francisco Bay Area, California, U.S.): Channel 26 KTSF (Cable Channel 8).
- Radio (San Francisco Bay Area, California, U.S.): AM 1450, Sing Tao Chinese Radio FM 96.1, and KCBS 740 AM.
- Newspaper magazine (U.S.): Sing Tao Daily-U.S. Life Magazine.
- Newspaper (Singapore): The Straits Times and Lianhe Zaobao.
- TV (Singapore): Channel 5, Channel 8, and Channel 12.
- Flyers for Voting (Fremont Union High School District, U.S.): Measure J and Measure K, Nov 2014 Vote.