INSUP LEE
Curriculum Vitae *

Education

- **Ph.D. Computer Science**
  University of Wisconsin-Madison, May, 1983.
  Dissertation title: *DYMOS: A Dynamic Modification System*

- **M.S. Computer Science**
  University of Wisconsin-Madison, December, 1978.

- **B.S. Mathematics with Honors**
  University of North Carolina at Chapel Hill, May, 1977.

Employment

- 9/08-present, Director, PRECISE Center, School of Engineering and Applied Science, University of Pennsylvania, Philadelphia, PA

- 9/05-present: Cecilia Fitler Moore Professor of Computer and Informatin Science, University of Pennsylvania, Philadelphia, PA

- 3/08-6/08: Distinguished Visiting Professor, Korea University, Seoul, Korea

- 9/04-1/10: Consultant, Fremont Associates, LLC

- 9/03-present: Professor of Electrical and Systems Engineering (Secondary)

- 5/98-present: Director, Real-Time Systems Group (RTG) Lab, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA

- 7/97-present: Professor, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA

- 7/94-6/97: CSE Undergraduate Curriculum Chair, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA

- 7/89-6/97: Associate Professor, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA

- 6/89-9/00: Consultant, Computer Command and Control Company, Philadelphia, PA

- 7/83-6/89: Assistant Professor, Department of Computer and Information Science, University of Pennsylvania, Philadelphia, PA

- 1/83-5/83: Instructor, Computer Sciences Department, University of Wisconsin-Madison, Madison, WI

- 6/79-7/79: Visiting Research Assistant to Korean Institute of Science and Technology, Seoul, Korea, on a Scholarship from KSEA (Korean Scientist and Engineers Association in America)

- 1/78-12/82: Research/Teaching Assistant, Computer Sciences Department, University of Wisconsin-Madison, Madison, WI

Awards and Honors

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*In SEAS Format; Updated on January 15, 2012.

- Co-Best Paper Award, CEAS '11, "Link Spamming Wikipedia for Profit," West, A.G., Chang, J., Venkatasubramanian, K., Sokolsky, O., and Lee, I., CEAS '11: 8th Annual Collaboration, Electronic Messaging, Anti-Abuse, and Spam Conference, Sept 2011.

- IEEE TC-RTS Outstanding Technical Achievement and Leadership Award, Dec 2008.

- The Edward M. Kennedy Award for Health Care Innovation 2007, CIMIT (Center for Integration of Medicine and Innovative Technology), Medical Device "PnP" Interoperability Team, Julian Goldman (leader), Dave Arney, Insup Lee, et al.

- Dissertation Advisor, Bronze Prize, Samsung Electronics' Humantech Thesis Contest, Dissertation on "A Design Framework for Real-Time Embedded Systems with Code Size and Energy Constraints" by Insik Shin and Sheayun Lee, Feb 2005. (Co-advised with Professor Sang Lyul Min at SNU)

- DVP Speaker of IEEE Computer Society Distinguished Visitors Program (DVP), 2004-2006.

- The Best Paper Award, IEEE Real-Time Systems Symposium, "Periodic Resource Model for Compositional Real-Time Guarantees," (with Insik Shin) Dec 2003.

- IEEE Fellow "for contributions to the specification languages and verification tools for real-time systems," 2001.

- KSEA Certificate of Appreciation "in recognition of excellent contribution to KSEA as Co-Chair of ICTS at the 2005 US-Korea Conference (UKC 2005)."

- IEEE Computer Society's Certificate of Appreciation

  - "for your important contributions to ISORC 2006 as a Symposium Co-Chair, April 25, 2006.
  - "for his important contributions to the ISORC 2004 as Program Co-Chair," May 12, 2004.
  - "for your important contributions to the development of the 1st IEEE CS Symposium on Object-oriented Real-time Distributed Computing program as Program Co-Chair," April 20, 1998
  - "for an outstanding performance as co-chairs of the 1992 and 1993 Real-Time Systems Symposiums," Feb 23, 1994.

- Board of Directors, Philip Jaisohn Memorial Foundation, since 1995.

- ACM Certification of Appreciation "in recognition of advice and guidance to the University of Pennsylvania Programming Team at the ACM Allegheny Regional Scholastic Programming Contest." Second Place, Allegheny Regionals, Division I, 1990.

- Honorary Masters Degree, University of Pennsylvania, 1989.

Professional Societies

- Member of IEEE Computer Society

- Member of ACM (Association of Computing Machinery)

- Member of EATCS (European Association for Theoretical Computer Science)

- Member of KOCSEA (Korean-American Computer Scientists and Engineers Association)

- Member of KSEA (Korean-American Scientists and Engineers Association)

Professional Activities - Editorial Boards

- Founding Co-Editor-in-Chief, KIISE Journal of Computing Science and Engineering (JCSE), since Sept 2007.

- Editorial Board, *Formal Methods in System Design*, since 1996.

- *Real-Time Systems: The International Journal of Time-Critical Computing Systems*: Associate Editor (2003-2010), Advisory Board since 2010.

- Editorial Board, Journal of Embedded Computing, since 2003.

- Editorial Board, *Journal of Electrical Engineering and Information Science*, 1998-2001.

- Editorial Board, *IEEE Transactions on Computers*, 1995-2000.

Professional Activities - Service and Leadership

- Member, Steering Committee, CPS-VO Education Group, since Dec 2011.

- Member, President's Council of Advisors on Science and Technology (PCAST) Networking and Information Technology (NIT) Technical Advisory Group (TAG), 2006-2007.

- Co-Chair, IEEE CS Technical Steering Committee on Embedded Sysystems, 2005-2006.

- Chair, IEEE Computer Society Technical Committee on Real-Time System, 2003-2004.

- Vice Chair, IEEE Computer Society Technical Committee on Real-Time System, 2001-2002. (Elected)

- Naval Research Lab (NRL) External Research Review Panel for Information Technology S&T Program (1997, 2004)

- President, Philadelphia Chapter of KSEA (Korean-American Scientists and Engineers in America), 1990-1991.

Professional Activities - Steering and Advisory Committees

- Advisory Committee, Body Sensor Network Contest, May 23, 2011. http://bsncontest.org/

- Advisory Board, CPS Summer School, Georgia Institute of Technology, June 22-26, 2009.

- Advisory Board, Asian Association for Foundation of Software (AAFS) since 2003.

- Advisory Board, International Conference on Embedded and Real-Time Computing Systems and Applications (RTCSA) since 2004.

- Steering Committee, CPS Week (since 2008), ES Week (since 2007), ATVA (since 2004), ISORC (since 2010), Run-Time Verification (since 2002),

- Steering Committee, International Conference on Real-Time Computing Systems and Applications (RTCSA), 1996-2002.

- Executive Committee, ACM SIGBED (since 2006)

- Executive Committee, IEEE CS Technical Committee on Real-Time Systems, 1994-1996, 2005-2011.

- Executive Committee, EMSOFT, since 2005.

- Advisory Committee, IT Symposium, UKC 2007, Aug 9-12.

- Executive Committee, KOCSEA (Korean-American Computer Scientists and Engineers Association), 1995-2001.

- Steering Committee Chair, NRC '98, The 9th KSEA Northeast Regional Conference, Rutgers University, New Brunswick, NJ, March 6-7, 1998.

Professional Activities - Conference and Workshop Chairs

- General Co-Chair, ICCPS 2012.

- Workshop Co-Organizer, SoSMD 2012.

- Program Co-Chair, ICCPS 2011.

- General Co-Chair, 1st Int. Conf. on Runtime Verification, Nov 1-4, 2010, Malta.

- Co-organizer, 2nd workshop on HCMDSS and MD PnP, CPS Week, San Francisco, April 2009.

- Co-organizer, CRTS (Compositional Real-Time Systems) Workshop. (Dec 2008, Dec 2009, Dec 2010)

- General Co-Chair, *Int. Conf. on Embedded and Real-Time Computing Systems and Applications (RTCSA)*, Taipei, Taiwan, Aug 2008.

- Workshop Co-Chair, *Workshop on Software and Systems for Medical Devices and Services (SMDS)*, Dec 3, 2008.

- Co-organizer, Joint workshop on High-Confidence Medical Devices, Software, and Systems/ Medical Device Plug-and-Play (HCMDSS/MD PnP). (Boston, June 25-27, 2007; San Francisco, April 16, 2009)

- Symposium Co-Chair, *IEEE ISORC*, Gyeongju, Korea, Apr 24-26, 2006.

- General Chair, *Int. Workshop on Automated Technology for Verification and Analysis (ATVA)*, Taipei, Taiwan, Oct 2005.

- Co-Chair, *Information & Communication Technology Symposium (ICTS)* KSEA UKC 2005, Aug 2005.

- Chair Organizer, High-Confidence Medical Device Software and Systems (HCMDSS) Workshop, Philadelphia, PA, June 2-3, 2005 (www.cis.upenn.edu/hcmdss/)

- Co-organizer, High-Confidence Medical Device Software and Systems (HCMDSS) Planning Workshop, Arlington, VA, Nov 16-17, 2004. (www.cis.upenn.edu/hcmdss-planning/)

- Program Co-Chair, *IEEE Int. Symposium on Object-oriented Real-time distributed Computing (ISORC)* Vienna, Austria, May 12-14, 2004.

- Program Co-Chair, *Int. Workshop on Automated Technology for Verification and Analysis (ATVA)*, Taipei, Taiwan, Dec 10-13, 2003.

- Program Co-Chair, *Int. Conf. on EMSOFT*, Philadephia, Oct 13-15, 2003.

- Program Co-Chair, *Monterey Workshop on Software Engineering fro Embedded Systems: From Requirements to Implementation*, Chicago, Sep 24-26, 2003.

- General Co-Chair, *IEEE Int. Symposium on Object-oriented Real-time distributed Computing (ISORC)*. [Newport Beach, CA, March 15-17, 2000], [KyounJu, Korea, April 24-26, 2006]

- Program Co-Chair, *IEEE Int. Symposium on Object-oriented Real-time distributed Computing (ISORC)*, Kyoto, Japan, April 20-22, 1998.

- Program Co-Chair, *Int. Workshop on Real-Time Computing Systems and Applications (RTCSA)*, Seoul, Korea, Oct 30 - Nov 1, 1996.

- Conference Co-Chair, *CONCUR '95 – Int. Conf. on Concurrency Theory*, Philadelphia, PA, Aug 1995.

- Program Co-Chair, *Int. Workshop on Real-Time Computing Systems and Applications (RTCSA)*, Seoul, Korea, Dec 1994.

- General Co-chair, *IEEE Real-Time Systems Symposium*, Dec 1993.

- Program Co-Chair, *IEEE Real-Time Systems Symposium*, Dec 1992.

- Conference vice-chairman, *KSEA Northeast Regional Conference*, Lehigh University, Nov 1988.

Professional Activities - Program Committees

- RTSS: *IEEE Real-Time Systems Symposium* (1985-1988, 1990, 1992, 1996, 1998-2002, 2004, 2006, 2007, 2008, 2009, 2010, 2011)

- DSMDS 2011

- EMSOFT: *ACM Conference on Embedded Software* (2003, 2004, 2005, 2008, 2011)

- ISORC: *IEEE Int. Symposium on Object-oriented Real-time distributed Computing* (1998, 2002-2005, 2007, 2009, 2010, 2012)

- RTAS: *IEEE Real-Time and Embedded Technology and Applications Symposium* (1990, 1998, 2000, 2001, 2004, 2007, 2009)

- ICCPS: *International Conference on Cyber-Physical Systems* (2010)

- DAC (2011)

- FTRA WCC-WTA 2011, The 7th International Symposium on Wireless sensor network Technologies and Applications for Smart Space (WTA 2011)

- CPNS'2011 (The First International Workshop on Cyber-Physical Networking Systems) (2011)

- RTCSA: *Int. Conference on Real-Time Computing Systems and Applications* (1994-1996, 1999, 2000, 2004, 2005, 2010, 2011)

- ECRTS: *Euromicro Conference on Real-Time Systems* (1999, 2003, 2004)

- ATVA: *Int. Sypmposium on Autoated Technology for Verification and Analysis* (2003, 2004, 2006, 2007, 2009, 2010, 2011, 2012)

- ICECCS (7th IEEE International Conference on Engineering of Complex Computer Systems) 2012.

- Wireless Health 2011

- BSN (Body Sensor Networks) 2010

- LCTES 2009, *ACM Conf. on Languages, Compilers, and Tools fro Embedded Systems*, Dublin, Irland

- FHIES *Int. Symposium on Foundations of Health Information Engineering and Systems* (2011, 2012)

- IEEE PIMRC 11, Wireless Networks and Health Care Track, Sept 2011, Toronto, Canada.

- FM2009, Eindhoven, the Netherlands.

- SSS *(Int. Symposium on Stabilization, Safety, and Security of Distributed Systems)* (2009, 2012)

- ICTAC (international Colloquium on Theoretical Aspects of Computing), Aug 2009.

- ACM SAC track on Real-Time Systems (2009, 2011)

- CSA (Int. Conf. on Computer Science and its Applications), Jeju, Korea, Dec 2009

- CASES: *Int. Conf. on Compilers, Architectures, and Synthesis for Embedded Systems* (2006)

- ICCP: *Int. Conf. on Intelligent Computer Communication and Processing* (2006)

- ICSOFT: *Int. Conf. on Software and Data Technologies* (2006, 2007)

- FORMATS: *Int. Conf. on Formal Modeling and Analysis of Timed Systems* (2005, 2007, 2008, 2009, 2012)

- MEMOCODE: *ACM-IEEE Int. Conf. on Formal Methods and Models of Codesign* (2005)

- CASES: *Int. Conf. on Compilers, Architectures, and Synthesis for Embedded Systems* (2006)

- ICCP: *Int. Conf. on Intelligent Computer Communication and Processing* (2006)

- ICSOFT: *Int. Conf. on Software and Data Technologies* (2006, 2007)

- FORMATS: *Int. Conf. on Formal Modeling and Analysis of Timed Systems* (2005, 2007, 2008, 2009)

- ETFA: Emerging Technologies and Factory Automation, 2009

- MEMOCODE: *ACM-IEEE Int. Conf. on Formal Methods and Models of Codesign* (2005)

- ICDCS: *IEEE Int. Conference on Distributed Computer Systems* (1999, 2001, 2003, 2012)

- FORTE: *Formal Techniques for Networked and Distributed Systems* (2002)

- EUC: *IFIP Int. Conference on Embedded and Ubiquitous Computing*, (2007).

- ASP-DAC: *Asia South Pacific Design Automation Conference* (2005)

- ICESS: *Int. Conference on Embedded Software and Systems.* (2004, 2007)

- QSIC: *Int. Conference for Quality Software* (2003, 2004, 2005, 2006)

- *KSEA UKC ICT (Information & Communication Technology) Symposium* (2003, 2006)

Professional Activities - Workshop Committees

- SEHC 2012

- USENIX HealthSec Workshop, 2012.

- 1st Int. Workshop on Large-Scale Cyber-Physical Systems (LCPS 2011), Dec 12-13, 2011.

- First Workshop on Future Directions in Cyber-physical Systems Security, US DHS, July 22-24, 2009.

- RV: *Workshop on Runtime Verification* (2001, 2002, 2006, 2009)

- IEEE International Workshop on Component-Based Design of Resource-Constrained Systems (CORCS 2008, 2009, 2012)

- WCPS: Int. Workshop on Cyber-Physical Systems (2009, 2008)

- WSNHC: *Wireless Sensor Networks for Health Care* (2007)

- HSCC: *Int. Workshop on Hybrid Systems: Computation and Control* (2005)

- JTRES: Workshop on Java Technologies for Real-time and Embedded Systems (2005)

- WORDS: *IEEE Int. Workshop on Object-oriented Real-time Dependable Systems* (1996, 1997, 1999, 2001, 2003, 2005)

- TeleHealth: *1st Int. Workshop on TeleHealth* 2008.

- TPTS: *Workshop on Theory and Practice of Timed Systems* (2002)

- WPDRTS: *Int. Workshop on Parallel and Distributed Real-Time Systems* (2000, 2001, 2002)

- RSP: *IEEE Int. Workshop on Rapid System Prototyping* (2000, 2001)

- *IEEE Int. Workshop on Distributed Real Time Systems* (2000)
  ARO/NSF Monterey Workshop on Increasing the Practical Impact of Formal Methods for Computer-Aided Software Development (1998)
  ACM Workshop on Language, Compiler, and Tool Support for Real-Time Systems (1995)
  Formal Tech in Real Time and Fault Tolerant Systems, Schleswig, Germany (1994)
  North America Process Algebra Workshop, Ithaca, NY, Aug 1993.

Professional Activities - Miscellaneous

- Advisory Member, KOCSEA President Election Board, 2009.

- Organization Committees:
  Workshop on Software Engineering and Programming Languages (1996)
  Mini-track Coordinator for Distributed Real-Time Systems, Hawaii Int. Conf. on System Sciences (1996)
  ARO Workshop on Formal Methods: Automatic Verification (1993)
  ARO Workshop on Formal Methods: Real-Time Systems (1992)
  ARO Short Courses on *Introduction to Parallel Architectures, Processing and AI Applications* (1986, 1987, 1988)
  Local arrangements,*8th Int. Symposium on Protocol Specification, Testing, and Verification* (1988)

- NSF Proposal Review Panels

- Award Selection Committee, "Being an Korean-American" essay contest for high school students, Philip Jaisohn Memorial Foundation. (1996-2001)

- Board of Advisors for KASCON VIII (Korean-American Students Conference) Philiadelphia, PA (April 1994).

- Ph.D. Program Evaluation Team for Computer Science and System Science Department, State University of NY at Binghamton, Sept 1992.

Research Interests

- Real-Time Systems, Embedded Systems, Cyber-Physical Systems, High-Confidence Medical Device Software Systems, Formal Methods and Tools, Model-based Development, Quantitative Trust Management, Compositionality, and Certification.

Courses Taught at the University of Pennsylvania

- CSE 341 – Compilers (Spring 1991, Fall 1991)

- CSE 380 – Introduction to Operating Systems (Spring 1984-1989, Fall 1994, Fall 1996-2000, Fall 2003)

- CSE 400/401 – Senior Design Projects (Fall 2008, Spring 2009, Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011)

- CIS 441/541 – Embedded Software for Life-Critical Applications (Fall 2010, Fall 2011)

- CSE 480 – Distributed and Real-Time Systems: New course designed and developed with the NSF equipment grant, "Teleconferenced Workstations: Improving Experimentation in Undergraduate Education." (Spring 1994, Spring 1996) Real-Time and Embedded Systems (Fall 2006)

- CIS 505 – Software Systems (Spring 2005-2007)

- CIS 523 – Programming Languages (Fall 1984)

- CIS 541 - Embedded and Cyber Physical Systems (Spring 2010)

- CIS 570 – Operating Systems (Fall 1983)

- CIS 640 – Advanced Topics in Computer Systems: Software Engineering (Spring 1995), Mobile Computing (Spring 1998), E-commerce and E-auction (Spring 2000)

- CIS 640 – Advanced Topics in Software Systems: Software Reliability Methods and Embedded Systems (Fall 2002); Embedded Systems and Sensor Networks (Spring 2004)

- CIS 642 – Seminar in Real-Time Computing (Fall 1989, Fall 1990, Spring 1992, Fall 1993, Fall 1995, Spring 1999, Spring 2001)

- CIS 671 – Advanced Topics in Operating Systems (Spring 1985, Spring 1989)

- CIS 799A – Seminar in Distributed Computing (Fall 1984-1987)

- EMTM 553 – Electronic Commerce Systems (Winter 2001, Spring 2001)

Courses Taught at the University of Wisconsin-Madison

- CS 302 – Algebraic Language Programming (Fall 1978, Spring 1979)

- CS 536 – Introduction to Programming Languages and Compilers (Spring 1983)

- CS 537 – Introduction to Operating Systems (Summer 1981)

Ph.D. Dissertation Supervision

1. David Smitley, *The Utilization of Processors Interconnected with a Reconfigurable Network*, May 1987. (Started as Research Scientist, Supercomputing Research Center, Lanham, Maryland)

2. Amy Zwarico, *An Algebraic Model for Communicating Time-Dependent Processes*, May 1988. (Started as Assistant Professor, Computer Science Department, the Johns Hopkins University, Baltimore, Maryland)

3. Richard Gerber, *Communicating Shared Resources: A Model for Distributed Real-Time Systems*, August 1991. (Started as Assistant Professor, Department of Computer Science, University of Maryland, College Park, Maryland) (Received the Morris and Dorothy Rubinoff Award for the best CIS Ph.D. dissertation, 1992)

4. Victor Wolfe, *Supporting Real-Time Concurrency*, August 1991. (Co-advised with Susan B. Davidson) (Started as Assistant Professor, Department of Computer Science, The University of Rhode Island, Kingston, RI)

5. Robert King, *Design, Implementation and Evaluation of a Real-Time Kernel for Distributed Robotics*, December 1991. (Started as Research Scientist, IBM, Yorktown Heights, NY)

6. Patrice Brémond-Grégoire, *A Process Algebra of Communicating Shared Resources with DenseTime and Priorities*, May 1994. (Continue working at UNYSIS)

7. Hanêne Ben-Abdallah, *GCSR: a Graphical Language for the Specification, Refinement and Analysis of Real-Time Systems*, Aug 1996. (Co-advised with Susan B. Davidson) (Started as Postdoc at the University of Waterloo)

8. Duncan Clarke, *Testing Real-Time Constraints*, Dec 1996. (Started as Assistant Professor, Department of Computer Science, The University of Kentucky, Lexington, KY)

9. Inhye Kang, *Real-Time System Analysis based on State-Space Exploration*, May 1997. (Started as Assistant Professor, Department of Computer Science, Soong-Sil University, Korea)

10. Hee Hwan Kwak, *Process Algebraic Approach to the Parametric Analysis of Real-time Scheduling Problems*, Feb 2000. (Started as Senior R&D Engineer II, Synopsys, Portland, OR)

11. Mahesh Viswanathan, *Foundations for the Run-Time Analysis of Software Systems*, Sept 2000. (Co-advised with Sampath Kannan) (Started as Postdoc at DIMACS, Assistant Professor, Department of Computer Science, University of Illinois at Urbana-Champaign) (Received the Morris and Dorothy Rubinoff Award for the best CIS Ph.D. dissertation, 2001)

12. Moonjoo Kim, *Information Extraction. for Run-time Formal Analysis*, Dec 2001. (Co-advised with Sampath Kannan) (Started as Postdoc at POSTECH, Korea; Currently Assistant Professor at KAIST, Korea)

13. Jia Wang, *Loss-Sensitive Decision Rules for Intrusion Detection and Response*, July 2004. (Co-advised with Link Zhao, Statistics Department) (CEO, Venus Info Tech Inc., Beijing, P.R. China)

14. Insik Shin, *A Compositional Framework for Real-time Embedded Systems*, Aug 2006. (Started as Postdoc at Malardalen University, Sweden; Assistant Professor at KAIST, Korea) (Received the Morris and Dorothy Rubinoff Award for the best CIS Ph.D. dissertation, 2006)

15. Usa Sammapun, *Monitoring and Checking of Real-Time and Probabilistic Properties*, May 2007. (Co-advised with Oleg Sokolsky) (Started as IT staff, Goldman Sachs)

16. Michael May, *Privacy APIs: Formal Models For Analyzing Legal Privacy Requirements*, May 2008. (Co-advised with Carl Gunter)

17. Madhukar Anand, *Conditional Models for Compositional Design of Real-Time Embedded Systems*, May 2008. (Cisco, Data Center Team)

18. Arvind Easwaran, *Advances in Hierarchical Real-Time Systems: Incrementality, Optimality, and Multi-processor Clustering*, Dec 2008. (Co-advised with Oleg Sokolsky) (Postdoc, IPP-HURRAY, Polytechnic Institute of Porto)

19. Nikhil Dinesh, *Regulatory Conformance: Logic and Logical Form*, Dec 2010. (Co-advised with Aravind Joshi) (Researcher, SRI)

Master's Thesis Supervision

- David M. Leonard, *Deterministic Multiple Processor Task Scheduling*, Dec. 1985.

- Osvaldo M. Yasuda, *Remote Predicate Invocation in Prolog*, May 1987.

- Robert King, *Design and Implementation of a Real-Time Distributed Kernel*, August 1987.

- Hanene Ben-Abdallah, *Design and Implementation of UDP/IP for Timix*, May 1991.

- Jisook Youn, *Methodology and Techniques for the Translation of SDL to ACSR*, May 1997.

- Yoshihito Takashima, Towards Time and Value Determinism in Real-Time System with Virtual Machine, August 2006. (Co-advised with Sebastian Fischmeister)

Senior Project Supervision

- Class of 1984 - Ned Batchelder, Michael S. Dusche, Elizabeth P. Gazouleas, Abigail Schweber

- Class of 1985 - Jerrol Davis, James C. Fu, Peter Go, Susanna Scala, Alan Waxman

- Class of 1986 - JoAnn Chang, Gaylord Holder, Shiu Kee Mok, Shin Ngai, John Rozario, Quang Tan, Khanh Tran

- Class of 1987 - Andrew Gideon, Vadim Mzhen

- Class of 1988 - Sung-Ho Ahn, Terence Lim

- Class of 1990 - Lalit Das, Manu Gambhir, Ronald Levinson

- Class of 1992 - Lawrence Katzman, Kok-Hoon Teo

- Class of 1995 - Ferit Albukrek, Alexander Gizis, Vicky Wei-Jen Lai, Ioi Kim Lam, Garrett Schade, John H. Seung

- Class of 1997 - Earl Grant-Lawrence Eugenia Ho, Chiram Littleton, David Robinson, Mike Selhorn, Adam Tarshis

- Class of 1998 - Sameer Merchant, Jeff Robertson, M. Ross, Andre Sung

- Class of 1999 - Charles Go

- Class of 2000 - Yuriko Horvath, Marvin Kawabata, Andrew Kim, David Kim, Cole Parker, Mike Rosenthal, Joel Susal (The senior design project by Kawabata, Susal, Parker, and Rosethal placed the 1st in the SEAS senior design competition.)

- Class of 2001 - Eric R Brueggemann, Daniel Chang, Dan Fleisher, Munenari Fukuda, Ethan D Gur-Esh, Jason W Heckathorn, Jisen Ho, Jay A Kalyanaraman, Alex Koo, Jonathan Liang, Sudeep Mathur, Christopher Ngan, Kevin O'Brien, Usa Sammapun, John A. Sinclair, Kavitha Shastry, Sam M. Sokolovsky, Robert Spier, Raymond Wong, Daniel A. Wu

- Class of 2003 - Jennifer R. Gau, Fei Jin, Uri Korn, Litton Chen (EE), Dan Keeley (EE), Jonathan Ha (EE), Sangyop Lee (EE)

- Class of 2004 - Yongjoon P. Lee, Khurram Taji

- Class of 2005 - Yoshihito Takashima, Mike Benoit (EE), Mike Swavola (EE)

- Class of 2010 - Ana Rosa Giannareas, Vanessa Kern, Nicholas Stevens, Adrian Viesca-Trevino (ESE) (Their senior design project on "Smart Alarms" placed the 1st in the SEAS senior design competition. This team is called NAVA.)

- Class of 2011 - Avantika Agrawal, Phillip Baker, Brittney Exline.

Selected External Habilitation and Ph.D. Committees

- External Examiner, Ph.D. Dissertation by Silviu Craciunas, Department of Computer Sciences, "Programmable Temporal Isolation for High-Performance and Real-Time Systems," University of Salzburg, Austria, July 2010.

- External Examiner, Ph.D. Dissertation in Computing and Software by Xia Yong Hu, "Proving Implementability of Timing Properties with Tolerances," McMaster University, Canada, Aug 11, 2008.

- Opponent, Ph.D. Dissertation by Daniel Sundmark, "Structural System-Level Testing of Embedded Real-Time System", Maalardalen University, Sweden, Feb 15, 2008.

- Kerncommissie of Ph.D. Dissertation by Pieter Jan Laurens Cuijpers "Hybrid Process Algebra," Techische Universiteit Eindhoven, Dec 9, 2004.

- Jury Member of Habilitation Thesis by Sergio Yovine, "Models, Algorithms, and Logics for the Analysis of Real-time and Hybrid Systems (Modèles, Algorithmes et Logiciels pour L'Analyse de Systèmes Temporisés et Hybrides)," University of Joseph Fourier, Grenoble, France, September 2001.

- Committee member of Ph.D. Dissertation by Gregor Goessler, "Compositional Modeling of Real-time Systems - Theory and Practice," University of Joseph Fourier, Grenoble, France, September 2001.

Postdoctoral Fellows and Research Associates

- Dr. Jin-Young Choi, Postdoc (1993-1995) (Professor, Korea University)

- Dr. Anna Philippou, Postdoc (Mar 1997 - Aug 1998) (Assistant Professor, University of Cyprus)

- Dr. Oleg Sokolsky, Research Associate (Sep 1998 - June 2001)

- Dr. Jitka Stribrna, Postdoc (Sep 2000 - Aug 2001)

- Dr. Hyoung Seok Hong, Postdoc (Sep 2000 - Feb 2002), Research Associate. (Mar 2003 - Feb 2004)

- Dr. Na Young Lee, Postdoc (Nov 2001 - Oct 2002)

- Dr. Martin Leucker, Postdoc (Jan 2002 - Mar 2002)

- Dr. Jesung Kim, Postdoc/Research Associate (April 2002 - Sep 2005) (Research Scientist, Mathworks)

- Dr. Li Tan, Postdoc (July 2002 - Dec 2003) (Research Scientist, Mathworks; Assistant Professor, Washington State University Tri-Cities)

- Dr. Sebastian Fischmeister, Research Associate, (Feb 2005 - Jan 2008) (Assistant Professor, University of Waterloo)

- Dr. Vinayak Prabhu, Postdoc (July 2008 - Aug 2009)

- Linh Thi Xuan Phan, Research Associate (March 2009 - Sept 2009), Postdoc (Oct 2009 - present)

- Dr. Eunkyoung Jee, Postdoc (Sept 2009 - Jan 2011)

- Dr. Krishna Venkatasubramanian (Sept 2009 - present)

- Dr. Anaheed Zaki (March 2011 - present)

Visiting Fellows

- Prof. Jin-Taek Choi, Department of Computer Science, Incheon University, Incheon, Korea (1993)

- Prof. Soonyong Seong, Department of Computer Engineering, Pusan University of Foreign Studies, Pusan, Korea (1995)

- Prof. Youngho Kim, Computer Science Department, Communication & Architecture Laboratory, Pusan National University, Pusan, Korea (1995)

- Dr. Young Si Kim, Software Engineering Department, ETRI (Electronics and Telecommunications Research Institute), Taejon, Korea (1995 - 1996)

- Dr. Vijay Gehlot, Visiting Postdoc (1995-1996)

- Prof. Soon Ju Kang, School of EECS, Kyungpook National University, Deague, Korea (May 2000 - May 2002, Feb 2007 - Feb 2008)

- Prof. Jin-Young Choi, Department of Computer Science and Engineering, Korea University, Seoul, Korea (Sep 2002 - Aug 2003, Aug 2009 - Aug 2010)

- Prof. Moon-kun Lee, Department of Computer Science, Chon-buk National University, Chon-buk, Chon-ju City, Korea. (Jan 2003 - May 2004)

- Prof. Chang Byung-Mo, Department of Computer Science, Sookmyung Women's University, Seoul, Korea (Mar 2003 - Aug 2003)

- Prof. Myuhng-Joo Kim, Department of Information Security Engineering, Seoul Women's University, Seoul, Korea (Mar 2003 - Feb 2004)

- Prof. NakUn Seong, Department of Computer Science, Kyungsung University, Busan, Korea (Mar 2004 - Feb 2005)

- Prof. Hyeokman Kim, Department of Computer Science, Kookmin University, Seoul, Korea (Jan 2005 - Dec 2005)

- Prof. Woojin Lee, School of EECS, Kyungpook National University, Deague, Korea (Jan 2005 - Dec 2005)

- Dr. Jang Yeol Kim, KAERI (Korea Atomic Energy Research Institute), Korea (Sept 2007-Aug 2008)

- Prof. Yoon Joon Lee, Department of Computer Science, KAIST, Korea (Sept 2007-Feb 2008)

- Dr. Jeong Nyeo Kim, ETRI, Korea (Feb 2009 - Feb 2010)

- Yun Kyung Park, ETRI, Korea (June 2009 - June 2010)

- Prof. Young Woong Ko, Department of Computer Engineering, Hallym University, Chuncheon, Korea (July 2009 - July 2010)

- Prof. Myuhng-Joo Kim, Department of Information Security Engineering, Seoul Women's University, Seoul, Korea (Aug 2010 - July 2011)

Selected SEAS and CIS Activities

- SEAS Faculty Council (2008-2010)

- SEAS Faculty Personnel Committee (2000-2001, 2005-2007)

- SEAS Search Committee for ESE Chair (2002-2004)

- CSE Undergraduate Curriculum Revision/Evaluation Committee (2002-2003, 2010-present)

- SEAS Committee on Intellectual Properties (2001)

- CIS Building Committee (1998-2000)

- CIS Undergraduate Curriculum Chair (1994-1997)

- Secretary of the SEAS Faculty (1993-1994)

- SEAS Staff Recognition Award Committee (1993-1994)

- CIS Faculty Recruiting Committee (1993-1994, Chair 1998-1999, 1999-2001, Chair 2002-2003, 2005, 2006)

- CIS WPE (Written Preliminary Exam) Committee (1984-1985, 1987-1988, Chair 1988, 1991-1992, 1992-2000, 2005-2007); WPE Revision Committee (1990-1991, 1993)

- Founding Faculty Advisor of the CSE Dining Philosophers (1989-1992) (Dining Philosophers were named after the famous concurrency problem with the same name taught in CSE 380 operating systems course.)

- Faculty Advisor of Student ACM Chapter (1984-1986, 1989-1992)

- Editor-in-Chief, CIS Newsletter (1991-1992)

- SEAS Search Committee for the Professorial Chair in Telecommunications (Jan 1986-Jan 1988)

- Department Colloquium Chair (1985-1986, 1991)

- Secretary of CIS Department (1985)

- Member of the SEAS Network Task Group (1984-1985)

Technology Transfer - Consultant to Small Business Grants

- STTR Phase I and II, "Simulation and Analysis Toolset for an Industry Standard Embedded System Specification Language," Fremont Associates, LLC, Camden, South Carolina. Sep 2004-Jun 2005, Sep 2005-Sep 2007.

- SBIR Phase I and II, "Software Tools for Formal Specification and Verification of Distributed Real-Time Systems," CCCC (Computer Command and Control Company), Philadelphia, 1993-1996.

Selected Invited Talks and Lectures since 2001

- Invited talk, "Medical Cyber-Physical Systems," 1st EU-US Workshop on Networked Monitoring % Control/CPS, Brussels, Belgium, June 28, 2011.

- Plenary talk, "Cyber Physical Systems: 21st Century Embedded Systems," ISET 2011, Jeju, South Korea, to be give on May 20, 2011.

- Invited talk, "Compositional scheduling and analysis techniques for real-time embedded systems," CPS Day @DGIST, Deagu, South Korea, to be given on May 19, 2011.

- Distinguished Lecture, "Medical Cyber Physical Systems," Department of Computer Science, Washington University, Dec 10, 2010.

- Keynote talk, "Cyber Physical Systems: The Next Computing Revolution," ACACES International Summer School, La Mola, Spain, July 11, 2010. (http://www.hipeac.net/summerschool/)

- "Medical Cyber Physical Systems," Special Session on CPS, DAC 2010, June 17, 2010.

- Keynote talk, "Cyber Physical Systems," Cornerstone Ceremony, ADREAM, LAAS-CNRS, Toulouse, France, June 15, 2010. (http://www.laas.fr/ADREAM)

- "Real-Time Challenges and Opportunities in HCMDSS," RTSS 09 Banquet talk, Dec 2, 2009.

- "High-Confidence Medical Device Systems and Healthcare Systems," Inter. Workshop on Cyber-Physical Systems (WCPS'09): Closing the Loop, in Conjunction with ESWeek 2009, Oct 16, 2009.

- "Cyber Physical Systems: The Next Computing Revolution," SNU, Korea, Sept 1, 2009.

- "Cyber Physical Systems: The Next Computing Revolution," KAIST, Korea, Aug 31, 2009.

- "Cyber Physical Systems: The Next Computing Revolution," Keynote Talk, UCK IST, Raleigh, July 18, 2009.

- Invited Panelist in NITRD Strategic Forum, Federal Strategic Plan for the Networking and Information Technology Research and Development Program, DC, Feb 24-26, 2009.
  (webcast at http://www.tvworldwide.com/events/nitrd/090225/)

- "Compositional Schedulability Analysis," McGill University, Oct 3, 2008.

- "Cyber Physical Systems: The Next Computing Revolution," KIST (Korea Institute of Science and Technology), Korea, June 16, 2008.

- "High-Confidence Automotive Cyber Phsyical Systems and Related Research at Penn," Hyundai Autonet, Korea, June 10, 2008.

- "Cyber Phsyical Systems and Related Research at Penn," Invited Talk, ETRI, Korea, June 9, 2008.

- "Compositional Schedulability Analysis and Cyber Physical Systems," Kyungpook National University, Korea, June 5, 2008.

- "High-Confidence Medical Device Software and Systems: Trends, Challenges, and Opportunities," Invited Technical Talk, 10th Software Design for Medical Devices, Philadelphia, PA, May 15, 2008.

- "Compositional Schedulability Analysis," Keynote talk, ITRC Meeting, Jeju Island, April 10, 2008.

- "Compositional Schedulability Analysis and Cyber Physical Systems," KAIST, Korea, April 7, 2008.

- "Cyber Physical Systems: The Next Computing Revolution," Sunmoon University, Korea, March 18, 2008.

- "Compositional Schedulability Analysis: Challenges, Techniques, and Open Problems," Maalardalen University, Sweden, Feb 15, 2008.

- "Network and Information Technology R&D in US," Department of Information and Communication of Korea, Nov 20, 2007.

- "Compositional Analysis Techniques for Real-Time Embedded Systems," SNU, Nov 19, 2007.

- "CPS: Cyber Physical Systems," Keynote talk, Workshop on Embedded Software in Non-IT Industry Seoul, Korea November 16, 2007

- "High Confidence Medical-Device Software and Systems (HCMDSS): A CPS Application Domain," NSF Symposium on Cyber-Enabled Discovery and Innovation, RPI, Troy, NY, Sep 6, 2007.

- "Compositional Techniques for Real-Time Embedded Systems," Keynote Talk, UKC 2007, Aug 2007.

- "Model-Based Techniques for Validating Implementations," Drexel University, Jan 25, 2007.

- "Opportunities and Challenges of Cyber Physical Systems (CPS), KOCSEA Workshop, Dec 2006.

- "High Confidence Software and Systems: A Software Perspective," PCAST NIT Subcommittee Meeting, Aug 30, 2006.

- "Model-Based Techniques for Validating Implementations," IEEE Montreal Chapter, McGill University, May 11, 2006.

- "Model-based Techniques for Real-Time Embedded Systems," KAIST, April 27, 2006.

- "Model-Based Techniques for Validating Implementations," Princeton University, April 14, 2006.

- "Model-Based Techniques for Validating Implementations," University of Alabama-Birmingham, March 8, 2006.

- "Model-based Development of Embedded Software," IEEE North Jersey Computer Chapter, Aug 2, 2005.

- "Ubiquitous Realization: Challenges and Opportunities for Embedded Systems," Samsung SDS Thought Leadership Conference 2005, Keynote talk, April 13, 2005.

- "Run-time verification and its application to IDS," Invited talk, Mini Sympoisium on Information Security, Northeastern University, Nov 9, 2004.

- "Compositional Periodic Interface for Real-Time Components," Invited talk, Workshop on Software Engineering Tools: Compatibility and Integration, The Monterey Workshop Series, Vienna, Oct 4-6, 2004.

- "Bridging the Gap between Specification and Implementation," Kunkook University, Korea, July 13, 2004.

- "Model-based Development of Embedded Software," EECS, Kyungpook Natioinal University, Korea, July 8, 2004.

- Moderator, Penel on "Major Push Needed in Distributed Real-Time Computing Research," ISORC, Vienna, May 14, 2004.

- "A Compositional Framework for Real-Time Gurantees," Future Generation Software Architectures in the Automotive Domain: Connected Services in Mobile Networks, Workshop, San Diego, Jan 10-12, 2004.

- "Model-Based Techniques for Validating Implementations at Run Time and Design Time," Drexel Univeristy, Nov 12, 2003.

- "Checking Conformance to Component Interface Specification," Next TTA Workshop, Philadelphia, Oct 2003

- "Formal Methods for Schedulability and Performance Analysis of Real-Time and Embedded Systems," one-day lecture at European Summer School on Embedded Systems 2003 in Vaseras, Oct 3, 2003.

- Panelist, "Future Challenges and Advances in Real-Time Computing," RTAS, D.C., June, 2003.

- "Formal Methods for CARA Development," FDA, Nov 2002.

- Panelist, Next TTA Workshop, Grenoble, Oct, 2002.

- "Model-Based Validation of Software," New Information Technology Age: The KSEA North-East Workshop & Special Event (NEWS 2002), Ocean City, MD, May 3-5, 2002.

- "Specification-Based Techniques for Validating Programs at Run Time and Design Time," Villanova University, April 22, 2002.

- Half-day tutorial on "Formal Methods for Timing and Schedlability Analysis of Embedded Systems," during ETAP '02, Grenoble, France, April 2002.

- "Formal Methods for CARA Development," WRAIR, Nov 2001.

- "Run-time Monitoring and Checking of Java Programs," ETRI, Aug 2001

- "A Family of Resource-Bound Real-time Process Algebras," KAIST, Aug 2001

- "A Family of Resource-Bound Real-time Process Algebras," Invited talk, *FORTE '01 (Formal Techniques for Networked and Distributed Systems*, Cheju, Korea, Aug 28-31, 2001.

Refereed Journals

1. "State-based Scheduling with Tree Schedules: Analysis and Evaluation," Madhukar Anand, Sebastian Fischmeister, Insup Lee, Linh T.X. Phan, to appear in Real-Time Systems Journal, 2012.

2. "A Comparison of Compositional Schedulability Analysis Techniques for Hierarchical Real-time Systems," Madhukar Anand, Sebastian Fischmeister, Insup Lee, to appear in ACM TECS, 2012.

3. "Challenges and Research Directions in Medical Cyber-Physical Systems," Insup Lee, Oleg Sokolsky, Sanjian Chen, John Hatcliff, Eunkyoung Jee, BaekGyu Kim, Andrew King, Margaret Mullen-Fortino, Soojin Park, Alexander Roederer, and Krishna Venkatasubramanian, To appear in Special Issue on Cyber-Physical Systems, IEEE Proceedings, Jan 2012. (Invited paper)

4. "PADS: An approach to modeling resource demand and supply for the formal analysis of hierarchical scheduling," Anna Philippou, Insup Lee, and Oleg Sokolsky, Theoretical Computer Science, Volume 413, Issue 1, 2012, pp. 2-20.

5. "Limitations of Threshold-Based Brain Oxygen Monitoring for Seizure Detection," Soojin Park M.D., Alexander Roederer, Ram Mani M.D., Sarah Schmitt M.D., Peter LeRoux M.D., Lyle Ungar Ph.D., Insup Lee Ph.D., Scott Kasner M.D. NEUROCRITICAL CARE: Volume 15, Issue 3 (2011), Page 469-476.

6. "Trust in Collaborative Web Applications," Andrew West, Jian Chang, Krishna Venkatasubramanian, Insup Lee. Future Generation Computer Systems, Feb 2011.

7. "Permission to Speak: A Logic for Access Control and Conformance," Nikhil Dinesh, Aravind Joshi, Insup Lee, Oleg Sokolsky, JLAP (Journal of Logic and Algebraic Programming) 80(1) 2011. p. 50 74

8. "UML Behavior Models of Real-time Embedded Software for Model-Driven Architecture," Jin Hyun Kim, Jin-Young Choi, Inhye Kang, Insup Lee, Special Issue on Foundations and Practices of UML, J. UCS (Journal of Universal Computer Science), 16 (17), 2010.

9. "Timed and Resource-oriented Statecharts for Embedded Software," Jin Hyun Kim, Inhye Kang, Jin-Young Choi, Insup Lee, IEEE Transactions on Industrial Informatics, Vol 6, No 4, Nov 2010. pp. 568-578.

10. "Generating Reliable Code from Hybrid Systems Models", M. Anand, S. Fischmeister, Y. Hur, J. Kim, I. Lee, IEEE Transactions on Computers, Vol 59, No 9, Sep 2010. pp. 1281-1294.

11. "Model Checking of Real-Time Properties of Resource-Bound Process Algebra," Junkil Park, Jungjae Lee, Jin-Young Choi, Insup Lee, IEICE Transactions on Fundamentals of Electronics Communications and Computer Sciences. Vol. E92-A, No.11,Nov. 2009.

12. "Plug-and-Play for Medical Devices: Experiences from a Case Study," David Arney Sebastian Fischmeister, Julian M. Goldman, Insup Lee, Robert Trausmuth, Biomedical Instrumentation & Technology, 2009. pp. 313-317.

13. "Hardware Acceleration for Conditional State-based Communication Scheduling On Real-Time Ethernet", Sebastian Fischmeister, Robert Trausmuth, Insup Lee, IEEE Transactions on Industrial Informatics, Vol 5, No 3, Aug 2009.

14. "Optimal Virtual Cluster-based Multiprocessor Scheduling," Arvind Easwaran, Insik Shin, and Insup Lee, Real-Time Systems, Vol 43, No 1, 2009. pp. 25-59. (Special edition for ECRTS 2008)

15. "Dynamic Trust Management," Matt Blaze, Sampath Kannan, Insup Lee, Oleg Sokolsky, Jonathan Smith, Angelos D. Keromytis, and Wenke Lee, em IEEE Computer, vol 42, no 2, Feb 2009, pp. 44-52.

16. "Compositional Real-Time Scheduling Framework with Periodic Model," Insik Shin and Insup Lee, *ACM TECS*, vol 7, no 3, April 2008. pp. 30:1-39 pages

17. "A Design Framework for Real-Time Embedded Systems with Code Size and Energy Constraints," Insik Shin, Sheayun Lee, Woonseok Kim, Insup Lee, Sang L. Min, *ACM TECS*, vol 7, no 2, Feb 2008. pp. 18:1-27 pages

18. "Network-Code Machine: Programmable Real-Time Communication Schedules ," Sebastian Fischmeister, Oleg Sokolsky, Insup Lee, *IEEE Trans. on Computers*, Nov 2007, pp. 1505-1519.

19. "Resources in Process Algebra," Insup Lee, Anna Philippou, Oleg Sokolsky, *JLAP (Journal of Logic and Algebraic Programming*, 72, 2007, pp. 98-122.

20. "High-Confidence Medical Device Software and Systems," Insup Lee, George Pappas, Rance Cleaveland, John Hatcliff, Bruce Krogh, Peter Lee, Harvey Rubin, Lui Sha, *IEEE Computer*, vol 39, no 4, April 2006. pp. 33-38.

21. "Compositional Modeling and Refinement for Hierarchical Hybrid Systems," Rajeev Alur, Radu Grosu, Insup Lee, Oleg Sokolsky, *JLAP (Journal of Logic and Algebraic Programming)* special issue on Hybrid Systems, Vol. 68, pp. 105–128, March 2006.

22. "Opportunities and Obligations for Physical Computing Systems," Jack Stankovic, Insup Lee, Al Mok, Raj Rajkumar, *IEEE Computer*, vol 38, no 11, Nov 2005, pp. 23-31.

23. "Formal Specifications and Analysis of the Computer Assisted Resuscitation Algorithm (CARA) Infusion Pump Control System," Rajeev Alur, David Arney, Elsa L. Gunter, Insup Lee, Jaime Lee, Wonhong Nam, Frederick Pearce, Steve Van AlbertJam Jiaxiang Zhou, *Int. Journal in Software Tools for Technology Transfer (STTC)*, vol 4, 2004. (Special Issue on CARA)

24. "Java-MaC: a Rigorous Run-time Assurance Tool for Java Programs," M. Kim, S. Kannan, I. Lee, O. Sokolsky, M. Viswanathan, *Formal Methods in Systems Design*, vol 24 (2), March 2004.

25. "Hierarchical Modeling and Analysis of Embedded Systems," Rajeev Alur, Thao Dang, Joel Esposito, Yerang Hur, Franjo Ivančić, Vijay Kumar, Insup Lee, Pradyumna Mishra, George Pappas, and Oleg Sokolsky, *Proceedings of the IEEE*, vol 91, no 1, January 2003. (Special Issue on Hybrid Systems.)

26. R. Fierro, A. Das, J. Spletzer, Y. Hur, R. Alur, J. Esposito, G. Grudic, V. Kumar, I. Lee, J. P. Ostrowski, G. Pappas, J. Southall and C. J. Taylor, "A Framework and Architecture for Multirobot Coordination," *International Journal of Robotics Research*, vol 21, no 10-11, 2002, pp. 977-995.

27. "Process Algebraic Modeling and Analysis of Power-Aware Real-Time Systems," Insup Lee, Anna Philippou, and Oleg Sokolsky, IEE Computing and Control Engineering Journal, vol 13, no 4, 2002, pp. 180-188.

28. "Parametric Approach to the Specification and Analysis of Real-time Scheduling based on ACSR-VP," Hee-Hwan Kwak, Insup Lee, Oleg Sokolsky, *Science of Computer Programming*, Vol. 42, No. 1, 2002, pp. 49-60.

29. "Distributed web-based simulation experiements for optimization," Enver Yücesan, Yuh-Chuyn Luo, Chun-Hung Chen and Insup Lee, Simulation Practice and Theory 9 (2001) pp. 73-90.

30. "Hiding Resources that Can Fail," A. Philippou, O. Sokolsky, I. Lee, R. Cleaveland, and S.A. Smolka, *Information Processing Letters*, Volume 80, Issue 1, Oct 2001.

31. "Verisim: Formal Analysis of Network Simulations," K. Bhargavan, C.A. Gunter, M. Kim, I. Lee, D. Obradovic, O. Sokolsky, and M. Viswanathan, *IEEE Transactions on Software Engineering*, Vol. 28, No. 2, Feb 2002, pp. 129-145. (Special Issue on Selected Papers from Int. Symp. on Sotware Testing and Analysis, 2000.)

32. "Specification and Analysis of Real-Time Systems with PARAGON," Oleg Sokolsky, Insup Lee, and Hanêne Ben-Abdallah, *Annals of Software Engineering*, 7, 1999, pp. 211-234.

33. "A Graphical Language for Specifying and Analyzing Real-Tvime Systems," Hanêne Ben-Abdallah and Insup Lee, Speical Issue of *Integrated Computer-Aided Engineering* on Real-time Engineering Systems, Vol 5, No 4, 1998, pp. 279-301.

34. "Parallel Algorithms for Relational Coarsest Partition Problems," Sanguthevar Rajasekaran and Insup Lee, *IEEE Transactions on Parallel and Distributed Systems*, Vol 9, No 7, July 1998, pp. 687-699.

35. "A Process Algebraic Approach to the Schedulability Analysis of Real-Time Systems," Hanêne Ben-Abdallah, Jin-Young Choi, Duncan Clarke, Young Si Kim, Insup Lee and Hong-Liang Xie, *Real-time Systems*, 15, 1998, pp. 189-219.

36. "Formal Verification, Testing and Checking of Real-Time Systems," Insup Lee, *ACM Computing Surveys*, 28, 4es, Dec 1996, pp. 182. (Special Issue: position statements on strategic directions in computing research)

37. "A Complete Axiomatization of Finite-state ACSR Processes," Patrice Brémond-Grégoire, Jin-Young Choi and Insup Lee, *Information and Computation*, 138 (2), Nov 1997, pp. 124-159.

38. "A Process Algebra of Communicating Shared Resources with Dense Time and Priorities," Patrice Brémond-Grégoire and Insup Lee, *Theoretical Computer Science*, 189, 1997, pp. 179-219.

39. "An Efficient State Space Generation for the Analysis of Real-time Systems," Inhye Kang, Insup Lee and Young Si Kim, *IEEE Trans. of Software Engineering*, Vol 26, No 5, May 2000, pp. 453-477.

40. "VERSA: A Tool for the Specification and Analysis of Resource-Bound Real-Time Systems," Duncan Clarke, Insup Lee and Hong-liang Xie, *Journal of Computer and Software Engineering*, Special Issue on Formal Methods in Software Engineering, 3 (2), 1995, pp. 189-215. (Invited paper)

41. "A Process Algebraic Approach to the Specification and Analysis of Resource-Bound Real-Time Systems," Insup Lee, Patrice Brémond-Grégoire and Richard Gerber, a special issue of the *Proceedings of the IEEE* on real-time systems, Jan 1994, pp. 158-171. (Invited paper)

42. "A Resource-Based Prioritized Bisimulation for Real-Time Systems," Richard Gerber and Insup Lee, *Information and Computation*, Volume 113, Number 1, Aug 1994, pp. 102-142.

43. "RTC: Language Support for Real-Time Concurrency," Victor Wolfe, Susan Davidson and Insup Lee, *Real-Time Systems*, Volume 5, Number 1, 1993, pp. 63-87.

44. "A Layered Approach to Automating the Verification of Real-Time Systems," Richard Gerber and Insup Lee, *IEEE Trans. on Software Engineering*, Special Issue on Specification and Analysis of Real-Time Systems, vol 18, 9, Sept 1992, pp. 768-784.

45. "Timed Atomic Commitment," Susan Davidson, Insup Lee and Victor Wolfe, *IEEE Transactions on Computers*, vol 40, 5, May 1991, pp. 573-583.

46. "A Performance Analysis of Timed Synchronous Communication Primitives," Insup Lee and Susan Davidson, *IEEE Transactions on Computers*, vol 39, 9, Sept. 1990, pp. 1117-1131.

47. "Synthesizing Minimum Total Expansion Topologies for Reconfigurable Interconnection Networks," David Smitley and Insup Lee, *Journal of Parallel and Distributed Computing*, vol 7, 1, August 1989, pp. 178-199.

48. "A Predictable Real-Time Kernel for Distributed Multisensor Systems," Insup Lee, Robert King and Richard Paul, *IEEE Computer*, vol 22, 4, June 1989, pp. 78-83.

49. "A Synthesis Algorithm for Reconfigurable Interconnection Networks," Insup Lee and David Smitley, *IEEE Transactions on Computers*, June, 1988, pp. 691-699.

50. "Adding Time to Synchronous Process Communications," Insup Lee and Susan Davidson, *IEEE Transactions on Computers*, August 1987, pp. 941-948.

51. "A Contextual Analysis of Pascal Programs," Robert Cook and Insup Lee, *Software–Practice and Experience*, vol 12, 2, February 1982, pp. 195-203.

Invited Conference and Invited Workshop Papers

52. "Challenges in the Regulatory Approval of Medical Cyber-Physical Systems," Oleg Sokolsky, Insup Lee, and Mats Heimdahl, Special session on software certification, EMSOFT, ESWeek, Oct 2011.

53. "Towards a Compositional Multi-Modal Framework for Adaptive Cyber-Physical Systems," Linh T. X. Phan and Insup Lee. Proceedings of the 1st Workshop on Cyber- Physical Systems, Networks, and Applications, Toyama, Japan, Aug. 2011.

54. "Assurance Cases in Model-Driven Development of the Pacemaker Software," Eunkyoung Jee, Insup Lee and Oleg Sokolsky, 4th Int. Symposium On Leveraging Application of Formal Methods, Verification and Validation (ISoLA), Part II, LNCS 6416, pp. 343-356, Amirandes, Heraclion, Crete, October 18-20, 2010. (Track on Certification of Software-Driven Medical Devices)

55. "Medical Cyber Physical Systems," Insup Lee and Oleg Sokolsky, CPS Demystified Session, DAC 2010, June 17, 2010.

56. "Cyber Physical Systems: The Next Computing Revolution," Raj Rajkumar, Insup Lee, Lui Sha, and Jack Stankovic, CPS Demystified Session, DAC 2010, June 17, 2010.

57. "Simulation Relations, Interface Complexity, and Resource Optimality for Real-Time Hierachical Systems," Insup Lee, Arvind Easwaran, Madhukar Anand, Linh Phan, and Oleg Sokolsky, Workshop on REconciling Performance with Predictability (RePP), Oct 15, 2009.

58. "Compositional Schedulability Analysis of Hierarchical Real-Time Systems," Arvind Easwaran, Insup Lee, Insik Shin, and Oleg Sokolsky, *IEEE ISORC 2007* May 7-9, 2007, pp. 274-281.

59. "Semantically Rich Control Systems Design Tools ," Madhukar Anand, Insup Lee, George Pappas, Oleg Sokolsky, Special Session on Hybrid Systems, 2006 CCA/CACSD/ISIC, Oct 2006, pp. 56-61.

60. "Code Generation from Hybrid Systems Models for Distributed Embedded Systems," Madhukar Anand, Jesung Kim, Insup Lee, *IEEE International Symposium on Object-Oriented Real-time distributed Computing (ISORC)*, Seattle, May 18-20, 2005, pp. 166-173.

61. "A Compositional Framework for Real-Time Embedded Systems," Insik Shin and Insup Lee, *Int. Service Availability Forum (ISAS 2005)*, Berlin, April 25-26, 2005.

62. "Automatic code generation from hybrid models for embedded applications," Jesung Kim and Insup Lee, KSEA UKC 2004, Raleigh/Durham, Aug 13-14, 2004.

63. "Formal Methods for Schedulability and Performance Analysis of Real-Time Embedded Systems," Insup Lee, Anna Philippou, and Oleg Sokolsky, *Proceedings of European Summer School on Embedded Systems (ESSES)*, Sweden, July 14-Oct 10, 2003. (http://www.mrtc.mdh.se/publications/0695.pdf) pp. 74-76.

64. "Modeling Distributed Autonomous Robots using CHARON: Formation Control Case Study," Yerang Hur, Rafael Fierro, and Insup Lee, *IEEE International Symposium on Object-Oriented Real-time distributed Computing (ISORC)*, Hakodate, Japan, May 14-16, 2003.

65. "A General Resource Framework for Real-Time Systems," I. Lee, A. Philippou, and O. Sokolsky, *Radical Innovations of Software and Systems Engineering in the Future: 9th International Monterey Workshop*, Venice, Italy, October 8-11, Springer LNCS 2941, RISSEF 2002. pp. 234-248.

66. "Hierarchical Hybrid Modeling of Embedded Systems." R. Alur, T. Dang, J. Esposito, R. Fierro, Y. Hur, F. Ivancic, V. Kumar, I. Lee, P. Mishra, G. Pappas, and O. Sokolsky, *Proceedings of EMSOFT'01: First Workshop on Embedded Software*, Springer LNCS 2211, Oct 8-10, 2001.

67. "A Family of Resource-Bound Real-time Process Algebras," Insup Lee, Jin-Young Choi, Hee Hwan Kwak, Anna Philippou, and Oleg Sokolsky, *FORTE '01 (Formal Techniques for Networked and Distributed Systems*, Edited by M. Kim, B. Chin S. Kang and D. Lee, Cheju, Korea, Aug 28-31, 2001. (pp. 443-458)

68. "Automatic Test Generation from Specifications for Control-Flow and Data-Flow Coverage Criteria," Hyoung Seok Hong and Insup Lee, *Proceedings of Monterey Workshop on Engineering Automation for Software Intensive System Integration*, Monterey, CA, June 2001.

69. R. Alur, Y. Hur, and I. Lee, "Modeling and Simulation of Multi-Agent Hybrid Systems," *Proc. 12th KSEA Northeast Regional Conference*, pp 70-74, April 2001.

70. Sampath Kannan, Moonjoo Kim, Insup Lee, Oleg Sokolsky, and Mahesh Viswanathan, "Run-time Monitoring and Steering based on Formal Specifications," *Proc. Modelling Software System Structures (MSSS) in a fastly moving scenario*, Santa Margherita Ligure, Italy, June 2000.

71. J.-Y. Choi, H.-H. Kwak, I. Lee, "A Framework for Embedded Real-Time System Design," 8th Workshop on Parallel and Distributed Real-Time Systems (WPDRTS'00), Springer Lecture Notes in Computer Science No. 1800, Cancun, Mexico, May 2000, pp 738-742.

72. Hee-Hwan Kwak, Insup Lee, and Oleg Sokolsky, "Parametric Approach to the Specification and Analysis of Real-time System Designs based on ACSR-VP," *Proc 1998 Monterey Workshop on Engineering Automation for Computer Based Systems*, Technical Report NPS-CS-99-002, Naval Postgraduate School, Monterey, CA, April 1999. (Workshop held in Camel-By-The-Sea, CA, Oct 27-29, 1998)

73. I. Lee, H. Ben-Abdellah, S. Kannan, M. Kim, O. Sokolsky, M. Viswanathan, "A Monitoring and Checking Framework for Run-time Correctness Assurance," *Proc. 1998 Korea-U.S. Technical Conference on Strategic Technologies*, Vienna, VA, Oct 22-24, 1998.

74. I. Lee, O. Sokolksy, H. Ben-Abdallah, "The CSR Approach to Specification and Analysis of Real-Time Systems," *Proc. Korea-U.S. Science and Technology Symposium: Computing and Telecommunication*, Chicago, IL, Apr 23-25, 1998.

75. H. Ben-Abdallah, I. Lee and O. Sokolsky, "Operational Semantics for Visual Simulation in PARAGON," to appearch in SERI Journal, December 1998. (invited submission)

76. "Automatic Generation of Tests for Timing Constraints from Requirements," Duncan Clarke and Insup Lee, *Proc. WORDS '97: IEEE 3rd Int. Workshop on Object-oriented Real-time Dependable Systems,* Feb 5-7, 1997.

77. "A Theory of Testing for Soft Real-Time Processes," Rance Cleaveland, Insup Lee, Phil Lewis and Scott A. Smolka, *Int. Conf. on Software Engineering and Knowledge Engineering (SEKE '96)*, June 1996.

78. "Schedulability and Safety Analysis in GCSR," Hanêne. Ben-Abdallah, Young-Si Kim and Insup Lee, *Proc. WORDS '96: IEEE 2nd Int. Workshop on Object-oriented Real-time Dependable Systems,* Feb 1-2, 1996.

79. "GCSR: A Graphical Language with Algebraic Semantics for Specifying Real-Time Systems," Hanêne Ben-Abdallah, Insup Lee, and Jin-Young Choi, *KSEA Northeast Conference*, March 1995.

80. "VERSA: A Tool for Analyzing Resource-Bound Real-Time Systems," Duncan Clarke and Insup Lee, *7th Int. Conf. on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems*, Austin, TX, May 1994.

81. "Formal Methods for the Specification and Analysis of Real-Time Systems," Insup Lee, *Proc. KSEA (Korean Scientist and Engineerer Assoc.) 20th Anniversary Symposium*, Washington, D.C., Nov 30 - Dec 1, 1991.

82. "Specification and Analysis of Resource Bound Real-Time Systems," Insup Lee and Richard Gerber, *Proc. REX Workshop on Real-Time: Theory in Practice*, Mook, The Netherlands, June 1991. Published as Springer-Verlag LNCS 600, 1992. pp. 371-396

83. "A Calculus for Communicating Shared Resources," Insup Lee, Susan Davidson and Richard Gerber, *Proc. ONR Workshop on Foundations of Real-Time Computing Research Initiative*, Washington, D.C., Oct 25-26, 1990.

84. "Formally Integrating Real-Time Specification and Implementation (CSR)," Insup Lee and Susan Davidson, *Proc. ONR Workshop on Foundations of Real-Time Computing Research Initiative*, White Oak, Md, Oct 25-26, 1989.

85. "Maintaining Consistency Over a Network in Real-Time Control Applications," Susan Davidson, Insup Lee and Victor Wolfe, *Proc. American Control Conference*, June 1989. pp. 528-533.

86. "Formally Integrating Real-Time Specification and Implementation," Insup Lee and Susan Davidson, *Proc. ONR Workshop on Foundations of Real-Time Computing Research Initiative*, Washington, D.C., Nov 29-30, 1988.

87. "A Real-Time Kernel for Distributed Multi-Robot Systems," Insup Lee, Robert King and Xiaoping Yun, *Proc. American Control Conference*, Atlanta, GA, pp. 1083 - 1088, June 15-17, 1988.

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