

# PIL HO KIM

## School Address

Department of Information Engineering  
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## EDUCATION

*Doctor of Philosophy*, Electrical and Computer Engineering  
Georgia Institute of Technology, Atlanta, GA, USA August 2009

*Master of Science*, Electronic and Electrical Engineering  
Pohang University of Science and Technology, Pohang, South Korea February 1996

*Bachelor of Science*, Electronic Engineering  
Pusan National University, Busan, South Korea February 1994

## PROFESSIONAL EXPERIENCE

*University of Trento, TN, Italy* Marie Curie Research Fellow  
*Department of Information Engineering and Computer Science* May 2010 - present

- The founder of the eLifeLog.org community (<https://www.elifelog.org>) for the global lifelog research collaboration.
- Research on (1) the fusion of heterogeneous data streams archived and monitored over a long period of time, (2) low level event detection and analysis for intelligent reasoning, and (3) human behavior modeling from user lifelog streams.
- Development of the open lifelogging platform to help users keep their lifelogs under their control ([https://www.elifelog.org/lab/elog\\_doc/](https://www.elifelog.org/lab/elog_doc/)).

*VP Technologies Inc., Atlanta, GA, USA* Research Staff Member  
*R&D Team* August 2009 - April 2010

- Mobile computing standardization (OpenCL-FO: Foreign Object Specification) for multimedia abstraction and content management.

*Georgia Institute of Technology, Atlanta, GA, USA* Research Assistant  
*Electrical and Computer Engineering* August 2002 - July 2009

- Development of the event-based RDAG (Relational Directed Acyclic Graph) database system to support heterogeneous data streams for information chronicling purposes.
- Extension of the SQL language named EML to support unstructured queries, semantic expansion, unified object namespace, transactional temporal queries, rank ordering and graph operations for time-series streams.
- Outdoor traffic sign detection image processing algorithm development for the US DOT (Department of Transportation) to process their street view data (3.5 TB of 50 million images covering the Louisiana, North Carolina and South Carolina states refreshed every two years) to evaluate the status of traffic

signs on the road for maintenance. It achieved 0% false-negative and 20% false-positive ratios on the DOT test data set greatly helping agencies who have been manually inspecting images.

IBM T.J. Watson Research Center, Hawthorne, NY, USA  
Pervasive Computing Solutions

Supplemental Researcher  
May - August 2005

- Personal information chronicling solution development for IBM enterprise environments. It logs user inputs and monitors group activities while linking low-level data events with each other to enable browsing/searching/annotating/editing/publishing information.

HP Labs  
Imaging Systems Laboratory

Visiting Researcher  
June 2003

- Contribution to the HP Lab experiential telepresence project that monitors group activities and analyzes multiple video & audio streams in real time. It then builds up spatio-temporal relationships between attendees and events to provide the result back to users for rich experiences earlier unattainable.

Research Institute of Industrial Science and Technology, Pohang, South Korea  
Facility & Automation Research Center

Research Staff Member  
December 1995 - July 2002

- Management of 22 data analysis and system automation projects as a principle/co-PI researcher resulting in publications and 17 granted patents achieving precious hands-on experiences in the industry.
- Engineering software system development (selected): (1) Roughing mill plant engineering software (1997-2000): 0.25 million lines of MFC/C++ codes, (2) Free forging mill scheduler (2001-2002): 0.15 million lines of MFC/C++ codes.

Pohang University of Science and Technology, Pohang, South Korea  
Electronic and Electrical Engineering

Research Assistant  
March 1994 - December 1995

- Development of the hierarchical mean field algorithm for binocular computer vision that constructs the 3D depth map from stereo images.
- Real-time fast moving slab (44 miles/hour) warp measuring computer vision system implementation for POSCO #2 thick plate plant.
- Development of the slab volume measuring system using multiple laser range finders and computer vision for POSCO #1 hot plate plant.

## PUBLICATIONS

*Ph.D. Thesis:* "E-model: Event-based graph data model theory and implementation," Completion Date: August 2009 Advisor: Dr. Vijay Madisetti, Georgia Institute of Technology, Dr. Ramesh Jain, University of California, Irvine.

*M.S. Thesis:* "Hierarchical mean field algorithms for binocular stereo vision," Completion Date: Feb. 1996 Advisor: Dr. Hong Jeong, Pohang University of Science and Technology, South Korea.

### Journal

1. Pil Ho Kim and Fausto Giunchiglia, "Lifelog Data Model and Management: Study on Research Challenges," International Journal of Computer Information Systems and Industrial Management, vol. 5, pp. 115-125, 2012.
2. James Tsai, Pil Ho Kim and Zhaohua Wang, "Generalized traffic sign detection model for developing a sign inventory," Journal of Computing in Civil Engineering, vol. 23, no. 5, pp. 266-276, 2009.
3. Pil Ho Kim, Myung Sik Chun, Joon Jeong Yi, and Young Hoon Moon, "Pass schedule algorithms for hot open die forging," Journal of Materials Processing Technology, vol. 130-131, pp. 516-523, 2002.

4. Wanki Hong, Pil Ho Kim, Young Hoon Moon, and Jounjeong Yi, "Hot strip width control method by using looper tension measuring system in finishing mill," *Journal of Materials Processing Technology*, vol. 111, pp. 74-78, 2001.
5. Pil Ho Kim, Myung Sik Chun, and Young Hoon Moon, "Development of process design software in roughing mill," *RIST Journal of R&D*, vol. 14, pp. 342-347, 2000.
6. Pil Ho Kim, Myung Sik Chun, and Young Hoon Moon, and Joon Jeong Yi, "Determination of carbon equivalent equation by using neural network for roll force prediction in hot strip mill," *Journal of the Korean Society for Technology of Plasticity*, vol. 6, no. 6, pp. 482-488, 1997.

#### *Conference Proceedings*

1. Pil Ho Kim and Fausto Giunchiglia, "Life Logging Practice for Human Behavior Modeling," in *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics*, pp. 2873-2878, 2012.
2. Pil Ho Kim and Fausto Giunchiglia, "Lifelog Event Management: Crowd Research Case Study," in *Proceedings of the EIMM 2011: 3rd ACM Workshop on Events in Multimedia*, pp. 43 - 48, 2011.
3. Pil Ho Kim, "Web-based research collaboration service: Crowd lifelog research case study," in *Proceedings of the 7th international conference on Next Generation Web Service Practices*, IEEE, pp. 188-193, 2011.
4. Pil Ho Kim, and Ramesh Jain, "Category-based functional information modeling for eChronicles," in *Proc. of the IEEE Workshop on Electronic Chronicles*, pp. 17-24, 2006.
5. Pil Ho Kim, Ullas Gargi, and Ramesh Jain, "Event-based multimedia chronicling systems," in *Proc. of the 2nd ACM workshop on Capture, Archival and Retrieval of Personal Experiences*, Hilton, Singapore, pp. 1-12, 2005.
6. Pil Ho Kim and Ramesh Jain, "Heterogeneous media events processing systems," in *Proc. of the ACM SIGMM workshop on Effective Telepresence*, New York, NY, USA, pp. 52-54, 2004.
7. Pil Ho Kim, Mark Podlaseck, and Gopal Pingali, "Personal chronicling tools for enhancing information archival and collaboration in enterprises," in *Proc. of the 1st ACM workshop on continuous archival and retrieval of personal experiences*, pp. 55-65, 2004.
8. Amarnath Gupta, Bin Liu, Pil Ho Kim, and Ramesh Jain, "Using stream semantics for continuous queries in media stream processors," in *Proc. of the 20th International Conference on Data Engineering: IEEE Computer Society*, 2004.
9. Rahul Singh, Zhao Li, Pil Ho Kim, Derik Pack, and Ramesh Jain, "Event-based modeling and processing of digital media," in *Proc. of the 1st International Workshop on Computer Vision meets Databases*, Maison de la Chimie, Paris, France, pp. 19-26, 2004.
10. Ramesh Jain and Pil Ho Kim, "Experiential meeting system," in *Proc. of the ACM SIGMM workshop on Experiential Telepresence*, Berkeley, California, USA, pp. 1-12, 2003.
11. Pil Ho Kim, Myung Sik Chun, Joon Jeong Yi, and Young Hoon Moon, "Development of pass schedule design software in forging process," in *Proc. of the International Conference on Advanced Forming and Die manufacturing Technology*, Pusan, Korea, pp., 2002.
12. Pil Ho Kim, Myoungsik Chun, and Joon Jeong Yi, "Rough mill process schedule and process designing algorithms and implementation," in *Proc. of the 4th Rolling Symposium*, Korean Society for Technology of Plasticity, Pohang, Korea, pp. 789-797, 2001.
13. Wan Kee Hong, Pil Ho Kim, Joon Jeong Yi, and Young Hoon Moon, "Development of looper tension meter in finishing mill for intelligent hot strip width control," in *Proc. of the 3rd Rolling Symposium*, Korean Society for Technology of Plasticity, pp. 423-428, 1999.
14. Wan Kee Hong, Pil Ho Kim, Joon Jeong Yi, and Young Hoon Moon, "Looper tension measuring system for hot strip width control in finishing mill," in *Proc. of the International Conference on Advanced Forming and Die manufacturing Technology*, pp. 303-309, 1999.
15. Pil Ho Kim, Young Hoon Moon, and Joon Jeong Yi, "Precise roughing mill edger roll gap measuring system," in *Proc. of the 9th POSCO Advanced Technology Conference 9th*, Pohang, Korea, pp., 1997.
16. Pil Ho Kim, Myung Sik Chun, Young Hoon Moon, and Joon Jeong Yi, "Determination of carbon equivalent equation by using neural network for roll force prediction in hot strip mill," in *Proc. of the Intelligent processing and manufacturing of materials*, Gold Coast, Australia, pp. 303-309, 1997.

17. Pil Ho Kim and Hong Jeong, "Development of slab width measuring sensor and communication systems," in Proc. of the 2nd Rolling Symposium, Korean Society for Technology of Plasticity, pp. 256-261, 1996.
18. Young Hoon Moon, Pil Ho Kim, and Joon Jeong Yi, "Development of refining model and set-up simulator for the accurate roll gap set-up in the hot strip finishing mill," in Proc. of the 2nd Rolling Symposium, Korean Society for Technology of Plasticity, pp. 295-303, 1996.
19. Pil Ho Kim and Hong Jeong, "MRF binocular stereo vision using pyramid image sequence," in Proc. of the IEEK Conference, Seoul, Korea, pp. 881-884, 1995.

#### *Patents Granted*

1. Pil Ho Kim and Jae Chul Park, "Method for deducing the algorithm of hot forging pass schedule in the quadrilateral bar forging," KR 1004315980000, 4 May 2004.
2. Pil Ho Kim and Myung Sik Chun, "Ultrasonic distance measuring apparatus using neural network," KR 1003992360000, 9 September 2003.
3. Pil Ho Kim and Joon Jeong Yi, "System for measuring camber of slab using pyramid image," KR 1003810980000, 8 April 2003.
4. Pil Ho Kim, "System for measuring camber of slab using color image analysis system," KR 1003810980000, 8 April 2003.
5. Wan Kee Hong, Pil Ho Kim, and Joon Jeong Yi, "Device for detecting tension of material of finishing mill," KR 1003682500000, 3 January 2003.
6. Pil Ho Kim and Joon Jeong Yi, "Edger roll gap measuring system using ultrasonic sensor," KR 1003705660000, 17 January 2003.
7. Pil Ho Kim, Yong Kwon Kim, and Young Hoon Moon, "Device for precise clamping for full-length tension run-out table transporting system," KR 2002609200000, 4 January 2002.
8. Young Hoon Moon, Pil Ho Kim, and Joon Jeong Yi, "Apparatus for automatically measuring distance between edger tools in hot rolling facility," KR 1003266820000, 19 February 2002.
9. Pil Ho Kim, Young Hoon Moon, and Joon Jeong Yi, "Automatic measuring apparatus for edger roll gap by using telescopic traveling equipment," KR 1003065900000, 10 August 2001.
10. Wan Kee Hong, Myung Sik Chun, and Pil Ho Kim, "Apparatus for preventing slip of steel sheet passing through tension threading system in hot rolling," KR 1002931910000, 2 April 2001.
11. Pil Ho Kim, Young Hoon Moon, and Joon Jeong Yi, "Apparatus for automatic measuring of gaps between edger tools by using air pressure," KR 1003065910000, 10 August 2001.
12. Wan Kee Hong, Pil Ho Kim, and Yong Kwon Kim, "Apparatus for converting clamping mode of front and rear parts of material to be processed in tension threading system on hot rolling traveling stand," KR 1002931920000, 2 April 2001.
13. Hong Jeong, Pil Ho Kim, and Tae Ho Kim, "Measuring device of the size of slab width laser," KR 1002700760000, 27 July 2000.
14. Pil Ho Kim, Young Hoon Moon, and Joon Jeong Yi, "Automatic measuring apparatus for edger roll gap," KR 1002654260000, 14 June 2000.
15. Tae Ho Kim and Pil Ho Kim, "Measuring device and method of sleeve width with laser," KR 1002701230000, 27 July 2000.
16. Pil Ho Kim, Young Hoon Moon, and Joon Jeong Yi, "Automatic measuring equipment of gap of edger roll," KR 2002071980000, 6 October 2000.
17. Pil Ho Kim, "Variously formed slab width measuring apparatus and its method," KR 1004736820000, 4 September 2000.

#### **RESEARCH HONORS AND AWARDS**

- Marie Curie Fellowship, EC FP7 Marie Curie Action cofunded with the Provincia Autonoma di Trento, Italy, EU, 2010.
- Ambassadorial scholarship, Rotary International, USA, 2002.
- National study abroad program award, Institute of Information Technology Advancement, Ministry of Information and Communication, South Korea, 2002.

- Advanced technology award, POSCO, South Korea, 1996.
- Summa cum laude award, Pusan national university, South Korea, 1994.

## ACADEMIC ACTIVITIES

### *Reviewer/TPC*

- IEEE Transactions on Multimedia
- 2012 IEEE Colloquium on Humanities, Science and Engineering Research
- 2012 IEEE International Conference on Power and Energy
- 2012 IEEE Student Conference on Research and Development
- 2012 IEEE Symposium on Business, Engineering and Industrial Applications
- 2012 IEEE Symposium on Industrial Electronics & Applications (ISIEA 2012)
- 2006 IEEE International Conference on Data Engineering

### *Teaching*

- Teaching assistant: Electronic circuit system experiments, Pohang Univ. of Sci. and Tech., South Korea, 1994.

### *Talk*

- “Life Logging Practice for Human Behavior Modeling,” IULM University, Milan, Italy (TBD, 2012)
- “Open platform supports for personal life logging: The eLifeLog architecture,” Knowdive seminar series, DISI, UNITN, Trento, TN, Italy (November 14th, 2012)
- “A survey on big data analytic platform technologies,” Knowdive seminar series, DISI, UNITN, Trento, TN, Italy (April 19th, 2012)
- “Experience of personal life logging with the discussion on promising research topics,” Knowdive seminar series, DISI, UNITN, Trento, TN, Italy (March 2nd, 2011)
- “Multimedia content analysis and management,” Knowdive seminar series, DISI, UNITN, Trento, TN, Italy (May 12th, 2010)
- “Reviews on MEMEX Activities,” Knowdive seminar series, DISI, UNITN, Italy (May 17th, 2010)
- “A categorical event-based information modeling,” IBM Research, Hawthorne, NY, USA (Jan 23rd, 2006)
- “Experiential meeting system,” HP Labs, Palo Alto, CA, USA (July 7th, 2003)

## SKILLS

*Database* (2002-present): MySQL, Hybrid graph database, SQL stored procedure programming and language extension.

*Web programming* (2002-present): Javascript and PHP. Development of the eLifeLog platform ([https://www.elifelog.org/lab/elog\\_doc/](https://www.elifelog.org/lab/elog_doc/))

*Multimedia Processing and Analysis* (1994-present): Real-time video signal acquisition and analysis, color image segmentation, traffic sign detection and type classification, and stereo vision.

*Enterprise Data Management and Industrial Automation* (1994-2002): Real-time operation data monitoring system, range and size meter using laser and computer vision, and on-line hot slab warp measuring computer vision system.

*C/C++ & MFC Programming* (1994-present): Personal information chronicling tools, plant design engineering software and operation data analysis tools.

## REFERENCES

- Fausto Giunchiglia (fausto@dit.unitn.it), Professor, Department of Information Engineering and Computer Science, Trento, TN Italy, <http://disi.unitn.it/~fausto/>
- Ramesh Jain (jain@ics.uci.edu), Donald Bren Professor in Information & Computer Sciences, Department of Computer Science, Bren School of Information and Computer Sciences, University of California, Irvine, USA., <http://ngs.ics.uci.edu/about.php>
- Vijay Madisetti (vijay.madisetti@ece.gatech.edu), Professor, Electrical and Computer Engineering, Georgia Institute of Technology, USA., <http://users.ece.gatech.edu/~vkm>
- Gopal Pingali (gpingali@us.ibm.com), Research Staff Member, IBM T.J. Watson Research Center, USA, <http://www.research.ibm.com/people/g/gpingali/>