

# Curriculum Vitae

## Jintae Lee

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### Education

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Ph.D. 1992	Computer Science, Massachusetts Institute of Technology
M.Phil. 1982	History and Philosophy of Science, University of Cambridge, England
M.A. 1981	Psychology and Social Relations, Harvard University
B.A. 1979	Mathematics, University of Chicago

### Research Interest

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My research interest is in knowledge management. My past research has focused on process knowledge, such as process models and ontology. That effort led to successful projects such as the Process Handbook project and the Process Interchange Format, a common process ontology that support sharing of process models across different representations and has been incorporated into the National Institute of Standards and Technology Process Specification Language. My recent research focus is on the use of text mining to study the role of concept in knowledge management--how a given concept differs across organizational and national cultures, how the similarities and differences among them can be identified and represented, how a given concept evolve over time, and how these differences affect knowledge sharing. The inter-nomological network project is an example in which, working with Professor Kai Larsen, we tried to identify related research by identifying closely related constructs through text mining.

### Teaching Interests

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Knowledge Management, Text Mining, Web technologies, Programming, Internet Resource Management, Information Retrieval, Artificial Intelligence, Expert Systems, Knowledge-based Systems, Cognitive Science

### Work Experiences

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1999 August - Present	Associate Professor (tenured in 2004), University of Colorado, Boulder
2007- 2009 May	Chair of the Operations and Information Management (formerly Systems) Division
1996 - 1999	Assistant Professor (tenured in 1999), Decision Sciences Dept. University of Hawaii
1993 - 1995	Assistant Professor, Information and Computer Sciences University of Hawaii
1991 - 1992	Research Fellow, Center for Coordination Science, MIT
1990 - 1992	Consultant, XEROX Palo Alto Research Center
1987 - 1990	Technical Staff, GTE Laboratory
1989	Consultant, ARRIS Pharmaceutical
1983 - 1991	Research Assistant and Teaching Assistant, Artificial Intelligence Laboratory, MIT
1986	Technical Instructor, Center for Coordination Science, MIT

### Peer-Reviewed Journal Articles

- Lee, J., G. Wyner, and B. Pentland 2008 "Process Grammar as a Tool for Business Process Design" *MIS Quarterly* 32(4) pp.757-778
- Lee, J. 2006 "The roles of scenario use in ontology development" *Knowledge and Process Management*. 13(4) pp.270-284
- Lee, Y., J. Lee, and Z. Lee 2006 "Social Influence on Technology Acceptance Behavior: Self-Identity Theory Perspective" *The Data Base for Advances in Information Systems*. 37(2-3)
- Lee, J. and G. Wyner 2003 "Defining Specialization for Dataflow Diagrams" *Information Systems* 28 (6) pp. 651-671
- Lee, J. 2003 "P2P File Sharing Systems: End User Perspective" *Communications of the ACM* 46(2) pp. 49-53
- Lee, J. and Y. Lee 2002 "Holistic Model of Security" *Information Management and Computer Security* 10(2) pp.57-63
- Wyner, G. and J. Lee 2002 "Defining Process Specialization for State Diagrams." *Computational and Mathematical Organization Theory* 8(2) pp.133-155
- Lee, J. and C. Schlenoff 2002 "Open Source Feasibility in Process Ontology Development" *Journal of Korean Society for Information Strategy* 5(1) pp. 5-13
- Lee, Y., J. Lee, and Z. Lee 2002 "Integrating Software Lifecycle Process Standards with Security Engineering" *Computers and Security* 21(4) pp.345-355
- Schlenoff, C., M. Gruninger, M. Ciocoiu, and J. Lee 1999 "The Essence of the Process Specification Language" *Transactions of the Society for Computer Simulation International* 16(4)
- Malone, T. W., K.Crowston, J. Lee, B. Pentland, et al. 1999 "Tools for inventing organizations: Toward a handbook of organizational processes" *Management Science* 45(3) pp.425-443
- Bui, T. and J. Lee 1999 "An agent-based framework for building DSS." in *Decision Support Systems*
- Lee, J., M. Gruninger, Y. Jin, T. Malone, A. Tate, G. Yost and other members of the PIF Working Group 1998 "The Process Interchange Format and Framework" *Knowledge Engineering Review*, 13(1) Cambridge Univ. Press. pp. 91-120
- Stricker, C. and J. Lee, 1998 "Reengineering a Software Review Process with the FPA (Function-based Process Analysis) Method" *Australian J. Information Technology* 6(1) pp.17-135
- Lee, J. 1997 "Design Rationale Systems: Understanding the Issues" *IEEE Expert: Intelligent Systems and Their Applications* 12(3) pp. 78-85
- Lee, J. and C. Stricker 1997 "Function-based Process Analysis" *Knowledge and Process Management (formerly Business Change and Reengineering)* 4(2) pp. 126 - 140
- Lee, J. and K.-Y. Lai 1991 "What's in Design Rationale?" special issue of *Human-Computer Interaction on Design Rationale*, 6(3-4) pp. 251-280
- Lee, J. and T. Malone 1990 "Partially Shared Views: A Scheme for Communicating among Groups that Use Different Type Hierarchies" *ACM Transactions on Information Systems* 8(1), January pp. 1-26

## Peer-Reviewed Conference and Workshop Papers

Kai R. Larsen, Lee, J., Li, J., and Bong, C.H. (2010), A Transdisciplinary Approach to Construct Search and Integration, 16th Americas Conference on Information Systems, Lima, Peru, August 12-15

Wyner, G. M. and Lee, J., 2005 Applying Specialization to Petri Nets: Implications for Workflow Design. In T. Davenport, H. Reijers, and M. Rosemann (Eds.), Proceedings of the First International Workshop on Business Process Design: Past, Present, Future (BPD 2005), Nancy, France, Springer-Verlag,

Lee, J. and E. Collar 2003 "Information Technology Fashions: Lifecycle Phase Analysis" for *Hawai'i International Conference on System Sciences*

Lee, Y. and J. Lee 2002 "Undermining Effects of Extrinsic Motivation on Intrinsic Motivation in User's Technology Acceptance" Academy of Management Conference, Denver CO

Lee, J. 2002 "Effects of Point-based Incentives on the Use of Knowledge Sharing Technology" Proceedings of Information Resource Management Association Conference. Selected for publication in *Current Issues in IT Education*. IRMA Press.

Lee, Y., J. Lee, and Z. Lee 2001 "The Effect of Self Identity and Social Identity on Technology Acceptance" Proceedings of International Conference on Information Systems. 2001 New Orleans, LA

Lee, J. and T. Bui 2000 "A Template-based Methodology for Disaster Management Information Systems" *Proceedings of the Hawaii International Conference on System Sciences*, Maui, Hawaii

Lee, J., Schlenoff, C., and Lubell, J. 1999 "Organizational Issues in Component Development for the NIST PSL Project," Proceedings of the International Symposium on Manufacturing with Applications at the WAC 2000 Conference, Maui, Hawaii, June 2000.

Polyak, S., Lee, J., Gruninger, M., and Menzel, C. 1998 "Applying the Process Interchange Format (PIF) to a Supply Chain Process Interoperability Scenario" *ECAI workshop on Applications of Ontologies and Problem-Solving Methods*

Stricker, C., Nicoulin, J., Lee, J., and Munar, S. 1997 "Video Assist: a Customizable Tool for Analyzing Video Data." *Proceedings of Hawaii International Conference on System Sciences*, Maui, Hawaii, Jan. 1997.

Lee, J. and the PIF Working Group 1996 "Process Interchange Format for Sharing Ontologies" ECAI Workshop on *Ontological Engineering*

Lee, J. and the PIF Working Group 1996 "Process Interchange Format (PIF): Ontology for Sharing Process Descriptions" *Tenth Knowledge Acquisition Workshop Track on Sharable and Reusable Ontologies*. Banff, Canada

Wyner, G. and Lee, J. 1995 "Applying Specializations for Process Models" *Proc. of Conference on Organizational Computing Systems*, Milpitas, CA. Aug 13-16

C. Dellarocas, Lee, J., Malone, T. W., Crowston, K., and Pentland, B. 1994 "Using a process handbook to design organizational processes", *Proc. of AAAI'94 Stanford Spring Symposium on Computational Organization Design*. Stanford, CA

Lee, J. 1993 "Goal-based Process Analysis: A Method for Systematic Process Redesign" *Proceedings of the Conference on Organizational Computing Systems*, Milpitas, CA. Nov. 1-5 ACM Press

Malone, T. W., Crowston, K., Lee, J. and Pentland, B. 1993 "Tools for inventing organizations: Toward a handbook of organizational processes". *Proceedings of the 2nd IEEE Workshop on Enabling Technologies Infrastructure for Collaborative*, IEEE Computer Society Press

Lee, J. 1992 "A Rationale Management System in Concurrent Engineering" *Proceedings of the Enabling Technology for Concurrent Engineering Workshop*. Concurrent Engineering Center, Univ. of West Virginia Morgantown, WV

Lee, J. 1992 "An Incremental Approach to Design Rationale Management" Proceedings of the AAAI'92 workshop on Design *Rationale Capture and Use*

Lee, J. 1991 "Extending the Potts and Bruns Model for Recording Design Rationale" *Proceedings of the 13th International Conference on Software Engineering* May 13-17 Austin, TX

Lee, J. 1991 "DRL: A Task-Specific Argument Representation Language" *Proceedings of 1991 AAAI Spring Symposium on Argumentation and Belief* March 26-28 Palo Alto, CA

Marinos, L., Papazoglou, M., and Lee, J. 1991 "Using a Unifying Mediator in an Environment of Distributed Heterogeneous Databases" (by) *Proceedings of the Twenty Fourth Annual Hawaii International Conference on System Sciences* January 8-11 Kauai, HI

Lee, J. 1990 "Sibyl: A Tool for Managing Group Decision Rationale" *Proceedings of Conference on Computer Supported Cooperative Work '90* Los Angeles, CA

Marinos, L. and Lee, J. 1989 "Using Structural and Procedural Knowledge in Database and Knowledge Base Integration." *Proceedings of IEEE International Workshop on Tools for Artificial Intelligence* Washington, D.C. Best Student Paper Award

Lee, J. and Malone, T. 1988 "How Can Groups Communicate When They Use Different Languages? Translating Between Partially Shared Type Hierarchies," *Proceedings of ACM Conference on Office Information Systems* Palo Alto, CA

## Editor-Reviewed Journal Articles

Geller, J., Y. Perl, and J. Lee 2004 "Ontology Challenges: A Thumbnail Historical Perspective" *J. Knowledge and Information Systems* special issue on ontology .Editorial. 6(4)

Gruninger, M. and J. Lee (in alphabetical order) 2002 "Ontology Applications and Design" *Communications of the ACM* Feb. 45(2) pp. 39-41

Lee, J. 1993 "Design Rationale Capture and Use" *AI Magazine*, 14(2), pp.24-26

Lee, J. 1992 "Design Rationale Management Research" *The Knowledge Engineering Review*, 7(4) pp.263-366

## Chapters in Books

Lee, J. and the PIF Working Group "Process Interchange Format 1.2" Malone, T., G. Herman, and K. Crowston (Eds.) *Toward a Global Repository for Organizing Business Knowledge* MIT Press. 2003. Also in *Handbook on Architectures of Information Systems* Eds. Bernus, P. Mertins, and G. Schmidt. Springer Verlag.

Wyner, G. and Lee, J. "Defining Specialization for Process Models" to appear in Malone, T., G. Herman, and K. Crowston (Eds.) *Toward a Global Repository for Organizing Business Knowledge* MIT Press. 2003

Klein, M., G. Herman., J. Lee, E. O'Donnell, and T. Malone "Inventing new business processes using a process repository" to appear in Malone, T., G. Herman, and K. Crowston (Eds.) *Toward a Global Repository for Organizing Business Knowledge* MIT Press. 2003

Lee, J. and the PIF Working Group 1998 "Process Interchange Format 1.2" *Handbook on Architectures of Information Systems* Edited by Peter Bernus, Kai Mertins, and Gunter Schmidt. Springer Verlag.

Lee, J. 1997 "Virtual Environments" In *Report on Engineering Research Trend Study Abroad (Information Superhighway)* Pp.6.33 - 6.46. Oct. 1996

Lee, J. 1995 "What's in Design Rationale?" In Moran, T. and J. Carroll (Eds.), *Design Rationale*, Ch.2. Lawrence Erlbaum Associates, Inc. pp.21-51 Mahwah, N.J.

Lee, J. 1990 "SIBYL: A Qualitative Decision Management System." in Winston, P. with S. Shellard (Eds.) *Artificial Intelligence at MIT: Expanding Frontiers*, vol. 1 Ch. 5 The MIT Press Cambridge, MA

## Technical Reports/Working Paper

Lee, J. 2002 "Information Technology Fashions: Building on the Theory of Management Fashions" MIT Sloan School Management Center for Coordination Science Working Paper #.219 Sloan Working Paper #.4244-02

Lee, J. 2002 "P2P Systems: What Matters to the End Users?" MIT Sloan School of Management Working Paper No. 4244-02 (CCS Working Paper # 217)

Wyner, G. and J. Lee 2001 Defining Specialization for Process Models by MIT Sloan School Management Working Paper #.4159 (CCS Tech. Report #.216)

Lee, J. and B. Pentland 2001 Grammatical Approach to Organizational Design MIT Sloan School of Management no. 4144 (CCS Technical Report #.215)

Schlenoff, C., Gruninger M., Tissot, F., Valois, J., Lubell, J., Lee, J. 2000 The Process Specification Language (PSL): Overview and Version 1.0 Specification NISTIR 6459, National Institute of Standards and Technology, Gaithersburg, MD

## Work in Progress

"Is IT Fashion a special case of Management Fashion?" Submitted to *J. Management Information Systems*

"What Makes People Use Information Technologies? A Motivation Theory Perspective" "submitted to *J. Information Technology* with Y. Lee

"A Grammatical Approach to Generating Design Alternatives: a Problem-Space Theoretic Analysis" with G. Wyner and B. Pentland

"Managing Internal Controls with Process Grammar" with G. Wyner and B. Pentland,

"e-CRM System for Personalized Advertisement and Sales Promotion using Customer Equity" with Ki Nam Park

"Application of QFD and Conjoint Analysis to Curriculum Development with Market and Stakeholder Orientation" with Ki Nam Park

## Grants

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### *Extramural Funding*

"Construct Utilization in the Behavioral Sciences" 2010-2013 NSF Science of Science and Innovation Policy Program. \$350,000 with Kai Larsen (PI) and Eliot Rich

"The Inter-Nomological Network for Behavioral Health: Novel Methods Development Application," 2009-2010. Grant no. NIH/NCRR Colorado CTSI Grant Number 5 UL1 RR025780, \$25,000 for research proposal, co-P.I. with Kai Larsen (PI) and Zoya Voronovich.

"A study on the Cyber Trade, Digital Economy, B2B Technologies in the Era of Electronic Commerce" 16,500,000 Won (about \$12,000).for the period of Oct. 2001 – Sep. 2002 from Korean Research Foundation (Korean equivalent of NSF) with Professors Park, B.J. and Kim, T. at Yosu University Business School, Korea.

"Technology Roadmap and Trend Analysis for Project Display Industry" 46,000,000 Won (about \$35,000) for

the period of July 2002- Sept. 2002 from Korea Association for Photonics Industry Development with Professors Ryu, Il (Yosu University Business School), C.S. Park, J. H. Kim, W.J. Park (all at the Univ. of Colorado, Boulder)

“Extending the Process Interchange Format project”. \$ 147,000 for the period of June 1 '97 - Feb. 21 '99 from DARPA (Defense Advanced Research Project Agency)

“Process Description Sharing project.” \$50,000 for the period of Oct '95 - Jan 31 '97 (originally until Oct 31 '96) from DARPA (Defense Advanced Research Project Agency)

“Advancement of the Process Handbook Project.” \$13,728 for the period of Feb. 94 - June 95 Subcontract from MIT Center for Coordination Science

“Tools for Inventing Organizations: Toward a Handbook of Organizational Processes” \$969,993, for the period of September '93 – August '97 Co-principal investigator on NSF IRI Grant 92-24093, (with T. Malone, K. Crowston, and B. Pentland).

#### *Intramural Funding*

UROP Fund 2007-2008 from Undergraduate Research Opportunity Program Office, CU Boulder

“Modeling of Script Organization and Invocation in the Context of On-line Information Search”. \$5,000 for '98-'99 academic year from Research and Faculty Development Committee from the College of Business Administration, University of Hawaii. With Prof. Regie Worthley

“Cross-Cultural Differences in Process Perception.” \$2,000 for '97-'98 academic year from Research and Faculty Development Committee from the College of Business Administration, University of Hawaii. With Prof. Regie Worthley.

## Patents

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- “A Computerized Handbook of Processes.” US Patent No. 6,070,163 (May 30, 2000) and European Patent No. 0692113 (October 14, 1998). The patent is shared with the Process Handbook principal investigators.
- “Computer System for Displaying Representations of Processes” US Patent No. 5,819,270 (October 6, 1998). The patent is shared with the Process Handbook principal investigators.
- “A computerized handbook of processes.” European Patent No. 0692113 (October 14, 1998). Canadian Patent No. 2,156,917 (April 22, 2003). The patent is shared with the Process Handbook principal investigators.

## Professional Activities

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- Advisory Board member of International Center of Informatics Research (ICIR) , Beijing Jiaotong Univ. 2009-present
- Program Committee member for Process in the Large Workshop, a part of 8<sup>th</sup> *International Conference on Business Process Management*. 2010
- Program Committee member for *International Conference on Enterprise Information Systems*, 2008
- Panel member for Society of Information Management (SIM) on “Future IT Leaders: Will Anyone be Home in the U.S.?” Nov., 2008
- Steering Committee member for the *IEEE Workshop on Enabling Technologies: Infrastructures for Collaborative Enterprises* to serve from 1996 – 2010
- International Editorial Board member of International Journal of Software Reuse 2007-present
- Program Committee member for 13<sup>th</sup> *AMCIS (American Conference on Information Systems)*, 2007
- Guest editor for the Knowledge and Information Systems special issue on Ontology Development and Use

2002-2003

- Guest editor for the Communications of the ACM special issue on Ontological Engineering, Feb. 2002
- Member for the panel on "What should we be teaching?" at the IRMA 2002 Conference
- Member for the Information Resource Management Association Education Committee 2001-Present
- An panel member for "Open Software" at the GROUPS 2001 Conference 2001
- Organizer and chair for the 3<sup>rd</sup> PIF Workshop, Aug. '97 Stanford Univ. Palo Alto, CA
- Organizer and chair for the 2<sup>nd</sup> PIF Workshop, July '96 Stanford Univ. Palo Alto, CA
- Co-chair (with Prof. David Chin at the University of Hawai'i) for the Multiple Cooperating User and Computer Agents track in the GISSIC95 conference, from Oct 17-Oct 20
- Invited presentation, "Internet Commerce," at the KOCSEA-KISS Workshop '95, July the Seoul National University, Seoul, Korea 1995
- Organizer and chair for the 1<sup>st</sup> PIF (Process Interchange Format) Workshop, Oct '94 MIT. Cambridge, MA
- Co-chair for the Ontology Use Working Group at La Jolla Workshop on Ontology Development and Use 1994
- Session Chair, Supporting long term collaboration in software development. in Conference on Organizational Computing Systems, Milpitas, CA. 1993
- Chair of the AAAI'92 workshop on Design Rationale Capture and Use, July '92 San Jose CA
- Invited presentation, " Process Interchange Format," at the ARPA-sponsored Process Technology Workshop, Washington, D.C. May 31-June 2 1993
- Panelist for the Requirements Engineering Symposium Jan '93, San Diego.
- Invited presentation at DARPA/CERC Workshop on Enabling Technology for Concurrent Engineering 1992

## Reviewer for:

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Note: All the reviews were done by invitation

### Journals

*Information Systems Research, Computer Aided Design, ACM Transactions on Database Systems, Communications of the ACM, Information Technology Journal, Management Information Systems Quarterly, ACM Transaction on Information Systems, International Journal of Man-Machine Studies, Cognitive Science, Human-Computer Interaction: A Journal of Theoretical, Empirical, and Methodological Issues of User Science and of System Design, Artificial Intelligence in Engineering Design and Manufacturing Systems, ACM Transactions on Software Engineering and Methodology (TOSEM), IEEE Expert: Intelligent Systems and Their Applications*

### Conferences

*Hawai'i International Conference on System Sciences, International Working Conference on Integration of Enterprise Information and Processes (IPIC), Conference on Organizational Computing Systems, International Joint Conference on Artificial Intelligence Workshop on Conflict Resolution, 2nd IEEE Workshop on Enabling Technologies Infrastructure for Collaborative Enterprises, Conference on Computer Supported Cooperative Work 1992, International Conference on Computer Applications in Industry and Engineering*

## Others

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US Citizen. Enjoy hiking and tennis., National Science Graduate Fellow (1979-1983), Danforth Fellow (1979-1984), Elected to Phi Beta Kappa, Sigma XI