

CURRICULUM VITAE : Joohyung Lee

Work Address

Computer Science and Engineering
School of Computing and Informatics
Fulton School of Engineering
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POSITION

- August 2005 – **Assistant Professor** Department of Computer Science and Engineering,
School of Computing and Informatics, Arizona State University
- May – June, 2009 Visiting researcher at the University of Western Sydney

EDUCATION

- Ph.D.** in Computer Sciences, University of Texas at Austin, TX, USA
B.S. in Computer Engineering, Seoul National University, South Korea

RESEARCH INTERESTS

computational logics, knowledge representation, logic programming, commonsense reasoning, non-monotonic reasoning, and computational semantics of natural language.

HONORS / AWARDS

- **Outstanding Paper Honorable Mention Award**, AAAI 2004.
- **Overseas Study Scholarship**, The Korea Foundation for Advanced Studies, 1998–2003.

PAPERS IN REFEREED JOURNALS

(Authors are listed alphabetically. All papers are available electronically at <http://peace.eas.asu.edu/joolee/papers/> .)

- J1 **Nonmonotonic Causal Theories.** Enrico Giunchiglia, Joohyung Lee, Vladimir Lifschitz, Norman McCain and Hudson Turner. *Artificial Intelligence*, 153:49–104, 2004.
- J2 **Representing the Zoo World and the Traffic World in the Language of the Causal Calculator.** Varol Akman, Selim T. Erdoğan, Joohyung Lee, Vladimir Lifschitz and Hudson Turner. *Artificial Intelligence*, 153:105–140, 2004.
- J3 **Loop Formulas for Circumscription.** Joohyung Lee and Fangzhen Lin. *Artificial Intelligence*, 170(2):160–185, 2006.
- J4 **A Generalization of the Lin-Zhao Theorem.** Paolo Ferraris, Joohyung Lee and Vladimir Lifschitz. *Annals of Mathematics and Artificial Intelligence*, 47:79–101, 2006.
- J5 **Stable Models and Circumscription.** Paolo Ferraris, Joohyung Lee and Vladimir Lifschitz. *Artificial Intelligence*, to appear.

- C1 **Additive Fluents.** Joohyung Lee and Vladimir Lifschitz. In Working Notes of *AAAI Spring Symposium on Answer Set Programming*, pages 116–123, 2001. (Selected as one of the four long presentations among 29 presentations)
- C2 **A Representation of the Zoo World in the Language of the Causal Calculator.** Joohyung Lee, Vladimir Lifschitz and Hudson Turner. In Working Notes of *Common Sense 2001: Fifth Symposium on Logical Formalizations of Commonsense Reasoning*, pages 174–185, 2001.
- C3 **A Representation of the Traffic World in the Language of the Causal Calculator.** Varol Akman, Selim T. Erdoğan, Joohyung Lee and Vladimir Lifschitz. In Working Notes of *Common Sense 2001: Fifth Symposium on Logical Formalizations of Commonsense Reasoning*, pages 1–10, 2001.
- C4 **Causal Laws and Multi-valued Fluents.** Enrico Giunchiglia, Joohyung Lee, Vladimir Lifschitz and Hudson Turner. *Fourth Workshop on Nonmonotonic Reasoning, Action and Change*, 2001.
- C5 **Describing Additive Fluents in Action Language C+.** Joohyung Lee and Vladimir Lifschitz. In Proc. *Eighteenth International Joint Conference on Artificial Intelligence (IJCAI 2003)*. pages 1079–1084, 2003. (acceptance ratio: 189/913)
- C6 **Loop Formulas for Disjunctive Logic Programs.** Joohyung Lee and Vladimir Lifschitz. *Nineteenth International Conference on Logic Programming (ICLP 2003)*, pages 451–465, 2003.
- C7 **Nondefinite vs. Definite Causal Theories.** Joohyung Lee. *Seventh International Conference on Logic Programming and Non-Monotonic Reasoning (LPNMR 2004)*, pages 141–153, 2004.
- C8 **Loop Formulas for Circumscription.** Joohyung Lee and Fangzhen Lin. In Proc. *Nineteenth AAAI Conference on Artificial Intelligence (AAAI 2004)*, pages 281–286, 2004. (acceptance ratio: 121/453)
Received Outstanding Paper Honorable Mention Award.
- C9 **A Model Theoretic Counterpart of Loop Formulas.** Joohyung Lee. In Proc. *Nineteenth International Joint Conference on Artificial Intelligence (IJCAI 2005)*, pages 503–508, 2005. (acceptance ratio: 240/1329)
- C10 **A Knowledge Module: Buying and Selling.** Joohyung Lee and Vladimir Lifschitz. In Working Notes of *AAAI Spring Symposium on Formalizing and Compiling Background Knowledge and Its Applications to Knowledge Representation*, 2006.
- C11 **Elementary Sets for Logic Programs.** Martin Gebser, Joohyung Lee and Yuliya Lierler. In Proc. *Twenty First AAAI Conference on Artificial Intelligence (AAAI 2006)*. (acceptance ratio: 236/776)
- C12 **Elementary Sets for Logic Programs.** Martin Gebser, Joohyung Lee and Yuliya Lierler. *Eleventh International Workshop on Nonmonotonic Reasoning (NMR 2006)*.
- C13 **A New Perspective on Stable Models.** Paolo Ferraris, Joohyung Lee and Vladimir Lifschitz. In Proc. *Twentieth International Joint Conference on Artificial Intelligence (IJCAI 2007)*, pages 372–379, 2007. (acceptance ratio: 212/1353)
- C14 **Head-Elementary-Set-Free Logic Programs.** Martin Gebser, Joohyung Lee and Yuliya Lierler. In Proc. *Ninth International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR 2007)*, pages 149–161, 2007.
- C15 **Yet Another Proof of the Strong Equivalence between Propositional Theories and Logic Programs.** Joohyung Lee and Ravi Palla. In Workshop Proceedings of *Correspondence and Equivalence for Nonmonotonic Theories (CENT 2007)*, (CEUR Vol 265), 2007.

- C16 **A Reductive Semantics for Counting and Choice in Answer Set Programming.** Joohyung Lee, Vladimir Lifschitz and Ravi Palla. In Proc. Twenty Third *AAAI Conference on Artificial Intelligence (AAAI 2008)*, pages 472–479, 2008. (acceptance ratio: 227/937)
- C17 **On Loop Formulas with Variables.** Joohyung Lee and Yunsong Meng. In Proc. Eleventh International Conference on Principles of Knowledge Representation and Reasoning (KR 2008), pages 444-453, 2008. (acceptance ratio: 69/251)
- C18 **Safe Formulas in the General Theory of Stable Models (Preliminary Report).** Joohyung Lee, Vladimir Lifschitz and Ravi Palla. In Proc. *19th International Conference on Logic Programming (ICLP 2008)*, pages 672-676, 2008.
- C19 **Classical Logic Event Calculus as Answer Set Programming.** Joohyung Lee and Ravi Palla. In Working Notes of *Answer Set Programming and Other Computing Paradigms (ASPOCP 2008)*, pages 119-133, 2008.
- C20 **Symmetric Splitting in the General Theory of Stable Models.** Paolo Ferraris, Joohyung Lee, Vladimir Lifschitz and Ravi Palla. In Proc. *21st International Joint Conference on Artificial Intelligence (IJCAI 2009)*, to appear (acceptance ratio: 331/1290)
- C21 **Circumscriptive Event Calculus as Answer Set Programming.** Tae-Won Kim, Joohyung Lee and Ravi Palla. In Proc. *21st International Joint Conference on Artificial Intelligence (IJCAI 2009)*, to appear (acceptance ratio: 331/1290)
- C22 **On Reductive Semantics of Aggregates in Answer Set Programming.** Joohyung Lee and Yunsong Meng. In Proc. *10th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR 2009)*, to appear.
- C23 **System F2LP - Computing Answer Sets of First-Order Formulas.** Joohyung Lee and Ravi Palla. In Proc. *10th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR 2009)*, To appear.

TALKS (Not including conference/workshop presentations)

- **Automated Reasoning about Actions.** Translational Genomics Research Institute (TGEN), Phoenix, AZ, 2003.
- **Loop Formulas for Disjunctive Logic Programs.** Texas Action Group Meeting, Las Cruces, New Mexico, 2003.
- **Loop Formulas for Nonmonotonic Logics.** Hong Kong University of Science and Technology, Hong Kong, 2003.
- **A Model-Theoretic Counterpart of Loop Formulas.** Dagstuhl Seminar on Nonmonotonic Reasoning, Answer Set Programming and Constraints, Germany, 2005.
- **Answer Set Programming.** KOCSEA technical symposium, Phoenix, Arizona, 2006.
- **AQUAINT Phase 3 Kick-off Meeting.** Santa Fe, NM, Oct 2006.
- **InfoX PI Meeting.** Dallas, TX, Mar 2007.
- **AQUAINT 6 month PI Meeting.** Washington DC, May 2007.
- **AQUAINT 12 month PI Meeting.** San Antonio, TX, Oct 2007.

- **Action Language C+**, US Korea Conference on Science, Technology, and Entrepreneurship (UKC), San Diego, CA, 2008.
- **Circumscriptive Event Calculus as Answer Set Programming**, Forum for Artificial Intelligence, University of Texas at Austin, Apr 3, 2009.
- **On Reductive Semantics of Aggregates in Answer Set Programming**, ISL seminar, University of Western Sydney, May, 2009.
- **A Reformulation of Circumscriptive Event Calculus as Answer Set Programming**, IIS/ICT seminar, Griffith University, June, 2009.
- **Answer Set Programming — An Effective Way to Talk to Computers**, Chung-Ang University, June, 2009.
- **Answer Set Programming — An Effective Way to Talk to Computers**, POSTECH, June, 2009.
- **Answer Set Programming — An Effective Way to Talk to Computers**, KAIST, June, 2009.

SOFTWARE DEVELOPMENT

- **Causal Calculator (CCALC) Version 2** A system for automated commonsense reasoning about actions, available at <http://www.cs.utexas.edu/users/tag/ccalc> .
- **System F2LP** An implementation of the stable model semantics for first-order formulas, available at <http://reasoning.eas.asu.edu/f2lp> .
- **System ECASP** An implementation of the Event Calculus as Answer Set Programming, available at <http://reasoning.eas.asu.edu/ecasp> .

RESEARCH GRANTS

- **DTO AQUAINT** Contract no: N61339-06-C-0123. Title: *Compiling AnsProlog to First-Order Theories — An Approach to Integrate AnsProlog Knowledge Bases with First-Order Knowledge Bases*. Sponsor: DOD-Navy. Amount: \$106,736. Period: 9/30/2006 – 9/29/2007. PI: Chitta Baral, co-PI: Joohyung Lee (co-PI invest: 90%).
- **NSF CISE** Grant number: IIS-0839821. Title: *SGER: Grounding-independent Reasoning in Answer Set Programming*. Amount: \$80,000. Period: 9/1/2008 – 8/31/2009. Sole PI.
- **NSF CISE** Grant number: IIS-0916116. Title: *Enhancing Nonmonotonic Declarative Knowledge Representation and Reasoning by Merging Answer Set Programming with Other Computing Paradigms* Amount: \$275,000. Period: 9/1/2009 – 8/31/2012. Sole PI.
- **IARPA SCIL** Title: *Integrating Machine Learning and Knowledge Representation for Discovery of Social Goals of Groups and Group Members from Their Language Usage* Amount: \$503,772 (base period). co-PI (20%).

- **Co-Chair** Workshop on Answer Set Programming and Other Computing Paradigms (ASPOCP 2008, 2009)
(<http://www.mat.unical.it/ASPOCP08/>, <http://www.mat.unical.it/ASPOCP09/> .)

- **Program Committee**

- 24th Conference on Artificial Intelligence (AAAI 2010)
- 12th European Conference on Logics in Artificial Intelligence (JELIA 2010)
- 12th International Conference on the Principles of Knowledge Representation and Reasoning (KR 2010)
- 13th International Workshop on Nonmonotonic Reasoning (NMR 2010): Action and Belief Change (ABC)
- 13th International Workshop on Nonmonotonic Reasoning (NMR 2010): Declarative Programming for NMR (DPNMR)
- Nonmonotonic Reasoning at 30 (2010)
- 21st International Joint Conference on Artificial Intelligence (IJCAI 2009)
- 10th International Conference on Logic Programming and Nonmonotonic Reasoning (LP-NMR 2009)
- 9th International Symposium on Logical formalizations of Commonsense Reasoning (Commonsense 2009)
- 23rd Conference on Artificial Intelligence (AAAI 2008)
- 12th International Workshop on Nonmonotonic Reasoning (NMR 2008)
- 8th International Symposium on Logical formalizations of Commonsense Reasoning (Commonsense 2007)
- AAAI 2006 Spring Symposium on Formalizing and Compiling Background Knowledge and Its Applications to Knowledge Representation and Question Answering
- 11th International Workshop on Nonmonotonic Reasoning (NMR 2006)
- 19th International Joint Conference on Artificial Intelligence (IJCAI 2005)
- Latin American Workshop on Non-Monotonic Reasoning (LANMR 2004)

- **Reviewer**

Journals Artificial Intelligence (*AIJ*), Theory and Practice of Logic Programming (*TPLP*), ACM Transactions on Computational Logic (*TOCL*), Decision Support Systems and Electronic Commerce (*DSS*), Annals of Mathematics and Artificial Intelligence (*AMAI*), Journal of Artificial Intelligence Research (*JAIR*).

Conferences Sixth International Conference on Logic Programming and Non-Monotonic Reasoning (*LPNMR 2001*), Sixth Symposium on Logical Formalizations of Commonsense Reasoning (*CS 2003*), Ninth International Conference on the Principles of Knowledge Representation and Reasoning (*KR 2004*), Sixteenth European Summer School of Logic Language and Information (*ESSLLI 2004*) Student Session, Nineteenth International Joint Conference on Artificial Intelligence (IJCAI-05), Twentieth National Conference on Artificial Intelligence (AAAI-05), Eighth International Conference on Logic Programming and Non-Nonotonic Reasoning (LPNMR-05), 11th International Conference on the Principles of Knowledge Representation and Reasoning (KR-08). 25th International Conference on Logic Programming (ICLP 2009).

Books Handbook of Knowledge Representation.

- **Secretary** Korean Computer Scientists and Engineers Association in America, 2006-2007.
- **Local Arrangement Chair** KOCSEA Technical Symposium, 2006.

Internal Services (ASU):

- **Ph.D. Thesis Committee** Jicheng Zhao (member).
- **Master Thesis Committee** Matt Hunsaker (member), Seungchul Jung (member), Tae-Won Kim (chair).
- **Undergraduate Honors Thesis Committee** Mike Bartholomew (chair), Alex Wallace (member).
- **ABET Committee** 2008–present.
- **TA Committee** 2007–2008.
- **Computing Resources Committee** 2006–2007.
- **Undergraduate Admission Committee** 2005–2006.