

Eunjee Song, Ph.D.

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RESEARCH INTERESTS

Software Engineering and Security:
Model-based Engineering, Aspect-Oriented Modeling, Software Design and Specification, Property Formalization and Analysis for High Confident Systems, Model Verification, Formal Methods, and Modeling, Analysis, and Adaptive Control of Complex Real-time/Embedded Systems.

EDUCATION

- Ph.D. Computer Science**, Colorado State University, **May 2007**
Dissertation title: *An Aspect-based Approach to Modeling Access Control Policies*
Advisor: Dr. Robert France, Co-Advisor: Dr. Indrakshi Ray
- M.S. Computer Science**, Colorado State University, **August 2001**.
M.S. report title: *A Meta-Modeling Approach to Precise Specification of Pattern Properties*
Advisor: Dr. Robert France
- 2nd B.S. Computer Engineering**, Seoul National University, Korea, **February 1991**
- B.S. Architecture**, Seoul National University, Korea, **February 1988**

HONORS

- Anita Reed Teaching Award**
2004
Computer Science Department, Colorado State University
- Awarded annually to a graduate student in Computer Science with demonstrated dedication to education and excellence in teaching.
- IBM Informal Awards**
1996, 1995, 1992
IBM Korea Inc., Seoul, Korea
- Awarded for the following accomplishments as a software engineer: new service contracts from marketing promotions targeting customer executives (1996), quality development of Business Application System/400 and appreciation from customer executives in consulting and demonstration sessions (1995), contribution to gathering and validating requirements for Hospital Information System (MedSolution) Series (1992)

EMPLOYMENT

Assistant Professor Jun. 2007 – present	Department of Computer Science, Baylor University, Waco, TX
Lecturer Aug. 2006 – May 2007	Department of Computer Science, Baylor University, Waco, TX
Student Instructor Jan. 2006 – May 2006	Department of Computer Science, Colorado State University, Fort Collins
Graduate Research Assistant Jul. 2004 – Jan. 2006	Department of Computer Science, Colorado State University, Fort Collins. Project Title: <i>Aspect-Oriented Approach to Policy Specification</i> . Funded by Air Force Office of Scientific Research (AFOSR). (PI: I. Ray, Co-PI: R. France).
Student Instructor Jul. 2001 – Dec. 2003 (3 Fall semesters)	Department of Computer Science, Colorado State University, Fort Collins
Summer Research Intern Jul. 2001	Qwest Telecommunication, Denver, Colorado Project Title: <i>Development of Repository-based Reuse Infrastructures</i> .
Graduate Teaching Assistant Jul. 1999 – May 2001	Department of Computer Science, Colorado State University, Fort Collins
Part-time Instructor Mar. 1997 – Jun. 1998	Department of Industrial Information, Tamna University, Jeju, Korea
Software Engineer Jan. 1991 – Feb. 1996	Korea Software Development Institute (KSDI), IBM Korea Inc., Seoul, Korea

TEACHING EXPERIENCE**At Baylor University**

- **Advanced Software Engineering: CSI5v93** (Graduate level) Spring 2008, Spring 2009
- **Software Engineering: CSI5324** (Graduate level) Fall 2009, Fall 2008, Fall 2007, Fall 2006
- **Software Engineering II: CSI3372** (Junior level) Fall 2009, Spring 2009
- **Principles of Software Design: CSI3342** (Junior/Senior level) Spring 2008, Spring 2007
- **Discrete Structures: CSI2350** (Freshman/Sophomore level) Fall 2008, Fall 2007

At Colorado State University

- **Software Specification & Design: CS517DL** (Graduate level on-line course) Spring 2006
- **Object-Oriented Design: CS414DL** (Senior/Graduate level on-line course) Fall 2003, Fall 2002, Fall 2001

- **Software Development Methods: CS314** (Junior/Senior level) Spring 2002, Spring 2001, Fall 2000. (Graduate Teaching Assistant)
- **Discrete Structures: CS166** (Freshman/Sophomore level) Spring 2000, Fall 1999. (Graduate Teaching Assistant)

At Tamna University, Jeju, Korea.

- **Computer Architecture** (Junior level) Fall 1997, Spring 1997.
- **Introduction to Computer Science** (Freshman level) Spring 1998.
- **Utilization of Computer and its Applications** (Computer literacy course for non-CS major students) Spring 1998, Fall 1997, Spring 1997.

GRANTS

Grants - awarded

1. Young Investigator Development Program (YIDP) grant of Baylor University, \$21,000, 6/2009-5/2010 (PI), "*A Verifiable Composition Approach for Trustworthy System Development*".
2. University Research Committee (URC) grant of Baylor University, \$7,500, 6/2009-5/2010 (Co-PI, with Dr. Randal L. Vaughn, Department of Information Systems), "*Security Intelligence Cooperative*".
3. University Research Committee (URC) grant of Baylor University, \$5,100, 6/2007-5/2008 (PI), "*Aspect Oriented Design of Trustworthy Software*".
4. New faculty start-up grant from Baylor University, 6/2007 – 5/2010 (PI).

Proposals – submitted, not awarded

1. "*Verifiable Composition of Access Control and Application Features*," submitted to National Science Foundation (NSF) Cyber Trust (CT) program on March 2008, \$251,389 (PI)

Proposals - under preparation

1. National Science Foundation (NSF), Trustworthy Computing (TC), CISE Cross-Cutting Programs. (Small Project Proposal Due: 12/2009)
2. National Science Foundation (NSF) Cyber-Physical System (CPS) program (Proposal Due: 2/2010).
3. National Science Foundation (NSF) Faculty Early Career Development (CAREER) Program (Proposal Due: 7/2010).

PUBLICATIONS

Journal Articles

1. **Eunjee Song**, Robert France, Indrakshi Ray, and Hanil Kim, "Checking Policy Enforcement in an Access Control Aspect Model", the Journal of Information, Special Issue on Convergence Computing, Vol. 11, No. 5, September 2008, International Information Institute. [indexed by SCI (Science Citation Index) Expanded]
2. **Eunjee Song**, Shuxin Yin, and Indrakshi Ray, "Using UML to Model Relational Database Operations", Computer Standards & Interfaces, Volume 29, Issue 3, Elsevier, March 2007, pp. 343-354. [indexed by SCI Expanded]
3. Y. R. Reddy, Sudipto Ghosh, Robert B. France, Greg Straw, J. M. Bieman, Nathan McEachen, **Eunjee Song**, and Geri Georg, " Directives for Composing Aspect-Oriented Design Class Models", Transactions on Aspect-Oriented Software Development, LNCS Volume 3880, Springer-Verlag, pp. 75-105, 2006.

4. Robert B. France, Dae-Kyoo Kim, Sudipto Ghosh, and **Eunjee Song**, "UML-Based Pattern Specification Technique", IEEE Transactions on Software Engineering. Vol. 30, number 3, pp 193-206, March 2004. [indexed by SCI]
5. Robert B. France, Sudipto Ghosh, **Eunjee Song**, and Dae-Kyoo Kim, "A Metamodeling Approach to Pattern-based Model Refactoring", IEEE Software Special Issue on Model-Driven Development, Vol.20. No.5. September/October 2003. [indexed by SCI]

Dissertation

1. **Eunjee Song**, "An Aspect-based Approach to Modeling Access Control Policies", Colorado State University, May 2007

Book Chapters

1. Robert B. France, Dae-Kyoo Kim, **Eunjee Song**, and Sudipto Ghosh, "Using Roles to Characterize Model Families", Practical Foundations of Business and System Specifications, pp. 179-195. Haim Kilov, Editor, Kluwer Academic Publisher. August, 2003, ISBN: 1402014805

Conference/Workshop Proceedings: Peer-Reviewed

1. Wuliang Sun, **Eunjee Song**, Paul C. Grabow, Devon M. Simmonds, "XMI2USE: A Tool for Transforming XMI to USE Specifications", 5th International Workshop on Foundations and Practices of UML (FP-UML) in conj. with 28th International Conference on Conceptual Modeling (ER 2009), Gramado, Brazil, November, 2009. [acceptance rate: 41.6%]
2. Devon M. Simmonds, Y. Raghu Reddy, **Eunjee Song**, Emanuel Grant, "A Comparison of Aspect-Oriented Approaches to Model Driven Engineering", International Conference on Software Engineering Research & Practice (SERP'09), Las Vegas, NV, July, 2009.
3. Nathan V. Roberts, **Eunjee Song**, Paul C. Grabow, "Model Interfaces for Two-Way Obliviousness" Proceedings of Software Engineering Track in 24th Annual ACM Symposium on Applied Computing (SAC), Honolulu, HI, March, 2009. [acceptance rate: 29%]
4. Paul Edelman and **Eunjee Song**, "Attack Patterns and Secure Software Design", Proceedings of the International Conference on Convergence Technology and Information Convergence (CTIC) '08, Jeju, Korea, November 2008.
5. **Eunjee Song**, Robert France, Indrakshi Ray, and Hanil Kim, "Checking Policy Enforcement in an Access Control Aspect Model", Proceedings of the International Conference on Convergence Technology and Information Convergence (CTIC) '07, Anaheim, CA, November 2007
6. **Eunjee Song**, Raghu Reddy, Robert B. France, Indrakshi Ray, Geri Georg, and Roger Alexander, "Verifiable Composition of Access Control and Application Features", 10th ACM Symposium on Access Control Models and Technologies (SACMAT), Stockholm, Sweden, June 1-3, 2005. [acceptance rate: 21%]
7. Dae-Kyoo Kim, Robert B. France, Sudipto Ghosh, and **Eunjee Song**, "A UML-Based Metamodeling Language to Specify Design Patterns", In Proceeding of Workshop on Software Model Engineering (WiSME) in conj. with UML 2003, San Francisco, CA, October 2003.
8. Greg Straw, Geri Georg, **Eunjee Song**, Sudipto Ghosh, Robert B. France, and James M. Bieman, "Model Composition Directives", the 7th International Conference on Unified Modeling Language (UML), Lisbon, Portugal, October 10-15, 2004.
9. Dae-Kyoo Kim, Robert B. France, Sudipto Ghosh, and **Eunjee Song**, "A Role-Based Metamodeling Approach to Specifying Design Patterns", 27th Annual International Computer Software and Applications Conference (COMPSAC), Dallas, TX, November 3-6, 2003.

10. Dae-Kyoo Kim, Robert B. France, Sudipto Ghosh, and **Eunjee Song**, "Using Role-Based Modeling Language (RBML) as Precise Characterizations of Model Families," 8th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS), Greenbelt, MD, December 2-4, 2002. [acceptance rate: 44%]
11. Sudipto Ghosh, Dae-Kyoo Kim, Robert B. France, and **Eunjee Song**, "Using Role Models as Precise Characterizations of Model Families", 11th OOPSLA Workshop on Behavioral Semantics: Serving the Customer, November 4, 2002.
12. **Eunjee Song**, Robert B. France, Dae-Kyoo Kim, and Sudipto Ghosh, "Using Roles for Pattern-Based Model Refactoring", Workshop on Critical Systems Development in conj. with UML (CSDUML), September 30 - October 4, 2002, Dresden, Germany.

Other Short Papers/Posters

1. **Eunjee Song**, Hanil Kim, Wuliang Sun, "A Property-based Verification Approach in Aspect-Oriented Modeling", Short Paper/Poster Session in 24th Annual ACM Symposium on Applied Computing (SAC), Honolulu, HI, March, 2009.
2. **Eunjee Song** and Nathan V. Roberts, "Verifiable aspect composition in UML models", 2nd IEEE International Conference on Secure System Integration and Reliability Improvement (SSIRI 2008), Yokohama, Japan, July, 2008
3. **Eunjee Song**, Robert B. France, and Indrakshi Ray, "A Rigorous Approach to Incorporating Access Control Features into Applications", Poster Session in 8th International Conference on Model Driven Engineering Languages and Systems (MoDELS), Montego Bay, Jamaica, October 2005
4. **Eunjee Song**, Indrakshi Ray, and Robert B. France, "A Formal Approach to Incorporating Access Control Features into Applications", Poster Session at Information Science and Technology Colloquium, Fort Collins, CO, April, 2005.
5. **Eunjee Song**, Indrakshi Ray, and Robert B. France, "A Formal Approach to Incorporating Access Control Features into Applications", Poster Session at Computer Science Research Symposium, Fort Collins, CO, April, 2005.
6. Jin-hee Ko, Eui-young Kang, Hanil Kim, and **Eunjee Song**, "A Comparison of Elementary Students' Web Searching Behaviors according to Personality Types", Discussion session in The 2005 International Conference on Frontiers in Education: Computer Science and Computer Engineering (FECS 2005), Las Vegas, NV, June 20-23, 2005
7. Robert B. France, Dae-Kyoo Kim, **Eunjee Song**, and Sudipto Ghosh, "Using Roles to Characterize Model Families", 10th OOPSLA Workshop on Behavioral Semantics: Back to the Basics, October 15, 2001.

Technical Reports

1. Robert B. France, Dae-Kyoo Kim, and **Eunjee Song**, "Role-Based Modeling Language (RBML) Specification V1.0", Technical Report 02-106, Computer Science Department, Colorado State University, 2002

Invited Talks/Presentations

1. "A Property-based Verification Approach in Aspect-Oriented Modeling", Poster Presentation in 24th Annual ACM Symposium on Applied Computing (SAC), Honolulu, HI, March, 2009.
2. "A Rigorous Approach to Incorporating Access Control Features into Applications", Invited Talk at 9th KOCSEA (Korean Computer Scientists and Engineers Association in America) Technical Symposium, Vienna, VA, October 25th to 26th, 2008
3. Research Presentation to NSF Program Directors, Dr. Karl Levitt (Cyber Trust & Trustworthy Computing,

CISE) and Dr. Sol Greenspan (CCF Core and Software Engineering, CISE), Arlington, VA, October 24th & 27th, 2008

4. “Checking Policy Enforcement in an Access Control Aspect Model”, Int’l Conference on Convergence Technology and Information Convergence (CTIC) 2007, Anaheim, CA, November 2, 2007
5. “Aspect-based Model-Driven Software Development: Part 1 & 2”, IT Research Center (ITRC), Jeju, Korea, July 18-19, 2007.
6. “An Aspect-Based Approach to Modeling Access Control Policies”, Department of Computer Education, Cheju National Univ., Jeju, Korea, July 12, 2007
7. “Study abroad at IT-related graduate programs in US and career opportunities after graduation”, Women in Science and Engineering (WISE), Jeju, Korea, July 12, 2007

GRADUATE STUDENTS MENTORED

- Nathan V. Roberts, M.Sc. in Computer Science, Aug. 2008, Thesis Title: “Two-way obliviousness in general aspect-oriented modeling.”
- Wuliang Sun, M.Sc. Candidate, 2008-present
- Vidhi Thapa, M.Sc. Candidate, 2008-present

AFFILIATIONS AND ACTIVITIES

Professional Affiliations

- Member, Association of Computing Machinery (ACM), 2003- present
- Member, Institute of Electrical and Electronics Engineers, Inc. (IEEE), 2003 - present
- Member, Korean Computer Scientists and Engineers Association in America (KOCSEA), 2008 - present, Co-Editor for 2009
- Member & Secretary, Upsilon Pi Epsilon (UPE), CS Honor Society, Colorado State University local chapter, 2005 – 2006

Program Committee

- ACM SIGAPP Symposium on Applied Computing (SAC), 2008, 2009, 2010
- International Conference on Convergence Technology and Information Convergence (CTIC), 2007, 2008, 2009
- International Workshop on Secure systems methodologies using patterns (SPattern) , 2010
- IEEE International Conference on Secure System Integration and Reliability Improvement (SSIRI), 2008
- IEEE International Conference on the Application of Digital Information and Web Technologies (ICADIWT), 2008

Journal and Conference Reviewer

- Computer Standards & Interfaces, 2009
- Iranian Journal of Electrical and Computer Engineering (IJECE), 2008
- Journal of Scientific Practical & Computing (SPC), 2007
- Journal of Autonomic and Trusted Computing (JoATC), 2006
- Software Quality Journal (SQJ), 2004
- ACM SIGAPP Symposium on Applied Computing (SAC) 2008, 2009, 2010
- ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), 2009
- IEEE International Conference on Secure System Integration and Reliability Improvement (SSIRI) 2008
- Conference on Convergence Technology and Information Convergence (CTIC) 2007, 2008, 2009

- IEEE International Conference on the Application of Digital Information and Web Technologies (ICADIWT) 2008
- International Conference on Aspect-Oriented Software Development (AOSD), 2006
- ACM / IEEE Model Driven Engineering Languages and Systems (MoDELS), 2005
- IEEE International Symposium on Software Reliability Engineering (ISSRE), 2005, 2008
- ACM Symposium on Access Control Models and Technologies (SACMAT), 2005
- IFIP WG 11.3 Working Conference on Data and Applications Security, 2005
- International Conference on the Unified Modeling Language (UML), 2002.

REFERENCES

Robert B. France, Ph.D., france@cs.colostate.edu

Indrakshi Ray, Ph.D., iray@cs.colostate.edu

James M. Bieman, Ph.D., bieman@cs.colostate.edu

Sudipto Ghosh, Ph.D., ghosh@cs.colostate.edu

Paul C. Grabow, Ph.D., paul_grabow@baylor.edu