

DAE-KYOO KIM

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EDUCATION

- Ph.D. 2004** Computer Science, Colorado State University, Fort Collins, Colorado
Advisor: Dr. Robert B. France
Ph.D. Dissertation: A Meta-Modeling Approach to Specifying Patterns
- M.S. 1997** Computer Science, Western Michigan University, Kalamazoo, Michigan
Advisor: Dr. Thomas F. Piatkowski
Master's Report: Formal State Specification of Telephone System using S^3L (State-System Specification Language)
- B.E. 1995** Information and Communication Engineering, Myongji University, Seoul, South Korea
Advisor: Dr. Hyuksoo Jang
Bachelor's Thesis: Efficient Development of Small-Sized LAN using CSMA/CD Protocol

RESEARCH INTERESTS

- Model-based software development
- Pattern formalization
- Pattern-based model development
- Aspect-oriented design development
- Component-based design development
- Specification of UML profiles
- Security policies
- Requirements validation

EMPLOYMENT

- Aug 2004 – Present **Assistant Professor**, Department of Computer Science and Engineering, Oakland University, Rochester, Michigan.
- Jan 2004 – July 2004 **Instructor**, Computer Science Department, Colorado State University, Fort Collins, Colorado. Involved in instruction, grading assignments, designing quizzes and assignments for Software Specification and Design graduate level course.
- May 2003 – Aug 2003 **Technical Specialist**, Summer Internship, NASA/Ames Research Center, Moffett Field, California. Project: Development of pattern formalization techniques and pattern supporting tools.
- Aug 2001 – Apr 2002 **Research Assistant**, Computer Science Department, Colorado State University, Fort Collins, Colorado. Project: Development of repository-based reuse infrastructures, Qwest Telecommunication, Denver, Colorado.

- Jan 2001 – Dec 2003 **Teaching Assistant**, Computer Science Department, Colorado State University, Fort Collins, Colorado. Involved in conducting lab sessions, designing quizzes and exams, and grading assignments for Personal Computing freshman level course, Discrete Structures junior level course, and Object-Oriented Design senior level course.
- Nov 2000 – Jan 2001 **Senior Software Engineer**, Implementation Department.
Dec 1997 – Nov 2000 **Software Engineer**, Implementation Department McHugh Software International, Waukesha, Wisconsin. Involved in: development of inventory control application software written in C, PL/SQL, and Uniface with the Oracle relational database; system testing of inventory control application software; creation of user documentation for developed programs. Performed on-site installation of application programs and trained customers in the use of CRT screens, radio frequency terminal screens, and reports generated by application software. Conducted customization of inventory control application software to meet the customers' needs, and provided support and warranty services to the customers. Clients: JCPenney, Keebler, Labatts, Longaberger, Monfort Beef, Nabisco, Nike Korea, Stanley Tools.
- Feb 1993 - Aug 1993 **Private**, Administration Department, The Republic of Korea Army, Ansan, South Korea.

TEACHING

- CSE 530 Software Prototyping and Validation Department of Computer Science and Engineering,
CSE 520 Fundamentals of Software Modeling Oakland University, Rochester, Michigan
CSE 539 Software Engineering
CSE/CIT 337 Software Engineering and Practice
CSE/CIT 230 Object-Oriented Computing I
- CS 414 Object-Oriented Design Computer Science Department, Colorado Sta
CS 166 Discrete Structures University, Fort Collins, Colorado
CS 110 Personal Computing

RESEARCH FUNDING

- “An Aspect-Oriented Approach to Developing UML Models of Access Control Systems”, The National Science Foundation (NSF), \$218,229, 01/01/2006-12/31/2008. (CCF-0523101)
- “Checking Design Pattern Conformance of Software Models”, University Research Committee (URC) Fellowship, Oakland University, \$8,500, 05/15/2005-8/15/2005.
- “Legacy Transformation Using Pattern-Based UML Modeling”, The Research Excellence Fund (REF), Oakland University, 01/2006-05/2006.

PUBLICATIONS

Journal Articles

1. Suntae Kim, **Dae-Kyoo Kim**, Lunjin Lu, and Sooyong Park, "Quality-Driven Architecture Development Using Architectural Tactics", Journal of Systems and Software, Vol. 82, No. 8, pp. 1211-1231, 2009. (SCIE indexed)
2. **Dae-Kyoo Kim**, Suntae Kim, Vanitha Sathyanarayanan, "Tool Support for Instantiating UML Models from Domain Models", International Journal of Computer Science and Information

Science, Vol.10, No. 1, pp. 26-36, 2009. (Invited paper, INSPEC/IEE indexed)

3. **Dae-Kyoo Kim** and Wuwei Shen, "Evaluating Pattern Conformance of UML Models: A Divide-and-Conquer Approach and Case Studies", *Software Quality Journal*, Vol. 16, No. 3, pp. 329-359, 2008. (SCI Expanded indexed)
4. **Dae-Kyoo Kim** and Charbel El Khawand, "An Approach to Precisely Specifying the Problem Domain of Design Patterns", *Journal of Visual Languages and Computing*, 2007. Vol. 18, No. 6, pp. 560-591. (SCI indexed)
5. Robert France, **Dae-Kyoo Kim**, Sudipto Ghosh, and Eunjee Song, "A UML-Based Pattern Specification Technique," *IEEE Transactions on Software Engineering*, Vol.30, No.3, pp. 193-206, March 2004. (SCI indexed)
6. **Dae-Kyoo Kim**, Robert France, and Sudipto Ghosh, "A UML-Based Language for Specifying Domain-Specific Patterns," *Journal of Visual Languages and Computing*, Special Issue on Domain Modeling with Visual Languages, Vol. 15, No. 3-4, pp. 265-289, 2004. (Ranked 2nd in Top 25 Most Read Articles by ScienceDirect in Jul-Sep 2004, SCI indexed)
7. Robert 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, pp. 52-58, September/October 2003. (SCI indexed)

Book Chapters

1. **Dae-Kyoo Kim**, "The Role-Based Metamodeling Language for Specifying Design Patterns", *Design Pattern Formalization Techniques*, pp. 183-205, Toufik Taibi, Editor, Idea Group Inc., 2007, ISBN: 1599042193.
2. Robert 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 Papers

1. Suntae Kim, Jintae Kim, Sooyong Park, and **Dae-Kyoo Kim**, "GARDIAN: A Tool for Validating Rule-Based Modeling Methods", In Proceedings of the 9th International Conference on Quality Software, Jeju, Korea, 2009. (6 pages, acceptance rate: 59%, 59/100)
2. **Dae-Kyoo Kim** "Software Quality Improvement via Pattern-Based Model Refactoring", In Proceeding of the 11th IEEE High Assurance Systems Engineering Symposium (HASE), pp. 293-302, Nanjing, China, 2008. (10 pages, acceptance rate: 22.4%, 44/196)
3. Suntae Kim, **Dae-Kyoo Kim**, Lunjin Lu, and SooYong Park "A Tactic-Based Approach to Embodying Non-functional Requirements into Software Architectures", In Proceeding of *the 12th IEEE International Enterprise Distributed Object Computing Conference (EDOC)*, pp. 139-148, Munich, Germany, 2008. (acceptance rate: 25%, 27/108)
4. **Dae-Kyoo Kim** and Lunjin Lu, "Pattern-Based Transformation Rules for Developing Interaction Models of Access Control Systems", *In Proceeding of the 10th International Conference on Software Reuse (ICSR)*, pp. 306-317, Beijing, China, 2008. (acceptance rate: 26.2%, 17/103)
5. Wuwei Shen and **Dae-Kyoo Kim**, "ICER: A Tool for Finding Errors in a UML Model", *In Proceedings of the 23rd Annual ACM Symposium on Applied Computing (ACMSAC), Software Engineering Track*, pp. 804-808, Fortaleza, Brazil, 2008, The ACM Press. (acceptance rate: 30%)

6. **Dae-Kyoo Kim** and Wuwei Shen, "An Approach to Evaluating Structural Pattern Conformance of UML Models," *In Proceedings of the 22nd Annual ACM Symposium on Applied Computing (ACMSAC), Software Engineering Track*, pp. 1404-1408, Seoul, Korea, 2007, The ACM Press. (acceptance rate: 33%)
7. **Dae-Kyoo Kim** and Jon Whittle, "Tool Support for Generating UML Models from Domain Patterns," *Selected Revised Paper Series: Lecture Notes in Computer Science (LNCS) of the 3rd ACIS International Conference on Software Engineering Research, Management & Application (SERA)*, to be published. (acceptance rate: 16.9%)
8. **Dae-Kyoo Kim**, Pooja Mehta, and Priya Gokhal, "Describing Access Control Patterns Using Roles," *In Proceedings of Pattern Languages of Programming Conference (PLoP)*, pp. 1-20, Portland, OR, 2006, ACM Press. (acceptance rate: Not published)
9. **Dae-Kyoo Kim** and Priya Gokhal, "A Pattern-Based Technique for Developing UML Models of Access Control Systems," *In Proceedings of the 30th IEEE Annual International Conference Software and Applications Conference (COMPSAC)*, pp. 317-324, Chicago, IL, 2006, The IEEE Computer Society Press. (acceptance rate: 31.1%)
10. **Dae-Kyoo Kim** and Lunjin Lu, "Inference of Design Pattern Instances in UML Models via Logic Programming," *In Proceedings of the 11th IEEE International Conference on Engineering of Complex Computer (ICECCS)*, pp. 47-56, Stanford, CA, 2006, The IEEE Computer Society Press. (acceptance rate: 67%)
11. **Dae-Kyoo Kim** and Jon Whittle, "Generating UML Models from Domain Patterns," *In Proceedings of The 3rd ACIS International Conference on Software Engineering Research, Management & Applications (SERA)*, pp. 166-173, Mount Pleasant, MI, 2005, The IEEE Computer Society Press. (acceptance rate: 48%)
12. Joao Araujo, Jon Whittle, and **Dae-Kyoo Kim**, "Modeling and Composing Scenario-Based Requirements with Aspects," *In Proceedings of the 12th IEEE International Requirements Engineering Conference (RE)*, pp. 58-67, Kyoto, Japan, 2004, The IEEE Computer Society Press. (acceptance rate: 27.3%)
13. Indrakshi Ray, Na Li, Robert France, and **Dae-Kyoo Kim**, "Using UML to Visualize Role-Based Access Control Constraints," *In Proceedings of the 9th ACM Symposium on Access Control Models and Technologies (SACMAT)*, pp. 115-124, Yorktown Heights, NY, 2004, The ACM Press. (acceptance rate: 29.5%)
14. **Dae-Kyoo Kim**, Indrakshi Ray, Robert France, and Na Li, "Modeling Role-Based Access Control Using Parameterized UML Models," *In Proceedings of Fundamental Approaches to Software Engineering (FASE/ETAPS)*, volume 2984 of Lecture Notes in Computer Science (LNCS), pp. 180-193, Barcelona, 2004, Springer-Verlag. (acceptance rate: 23%)
15. Indrakshi Ray, Na Li, **Dae-Kyoo Kim**, and Robert France, "Using Parameterized UML to Specify and Compose Access Control Models," *In Proceedings of the Sixth IFIP TC-11 WG 11.5 Working Conference on Integrity and Internal Control in Information Systems (IICIS)*, pp. 49-66, Lausanne, Switzerland, 2003, Kluwer Academic Publishers. (acceptance rate: Not published)
16. **Dae-Kyoo Kim**, Robert France, Sudipto Ghosh, and Eunjee Song, "A Role-Based Metamodeling Approach to Specifying Design Patterns," *In Proceedings of the 27th IEEE Annual International Computer Software and Applications Conference (COMPSAC) 2003*, pp. 252-257, Dallas, TX, 2003, The IEEE Computer Society Press. (acceptance rate: Not published)
17. **Dae-Kyoo Kim**, Robert France, Sudipto Ghosh, and Eunjee Song, "Using Role-Based Modeling Language (RBML) to Characterize Model Families," *In Proceedings of the 8th IEEE International*

Conference on Engineering of Complex Computer Systems (ICECCS), pp.107-116, Greenbelt, 2002, The IEEE Computer Society Press. (acceptance rate: 44%)

Workshop Presentations

1. **Dae-Kyoo Kim**, "Evaluating Conformance of UML Models to Design Patterns," *In Proceedings of 10th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS)*, pp. 30-31, Shanghai, China, 2005, The IEEE Computer Society Press.
2. Jon Whittle, Joao Araujo, and **Dae-Kyoo Kim**, "Modeling and Validating Interaction Aspects in UML," *In Proceedings of Workshop on Aspect Oriented Modeling*, pp.1-7, San Francisco, CA, 2003.
3. **Dae-Kyoo Kim**, Robert France, Sudipto Ghosh, and Eunjee Song, "A UML-Based Metamodeling Language to Specify Design Patterns," *In Proceedings of Workshop on Software Model Engineering (WiSME)*, pp. 1-9, San Francisco, CA, 2003.
4. **Dae-Kyoo Kim**, Sudipto Ghosh, Robert France, and Eunjee Song, "Software Component Specification Using Role-Based Modeling Language," *In Proceedings of 11th OOPSLA Workshop on Behavioral Semantics: Serving the Customer*, pp. 1-9, Seattle, WA, 2002.
5. Eunjee Song, Robert France, **Dae-Kyoo Kim**, and Sudipto Ghosh, "Using Roles for Pattern-Based Model Refactoring," *In Proceedings of Workshop on Critical Systems Development (CSDUML)*, pp. 1-8, Dresden, Germany, 2002.

Technical Reports

1. **Dae-Kyoo Kim**, "Evaluating Pattern Conformance of UML Models," Technical Report CSE-05-TR-0501, Computer Science and Engineering, Oakland University, Rochester, Michigan, 2005. (13 pages)
2. **Dae-Kyoo Kim** and Jon Whittle, "Generating UML Models from Domain Patterns," Technical Report CSE-05-TR-0301, Computer Science and Engineering, Oakland University, Rochester, Michigan, 2005. (25 pages)
3. Robert 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, Fort Collins, Colorado, 2002. (59 pages)
4. Robert France, **Dae-Kyoo Kim**, and Eunjee Song, "Patterns as Precise Characterizations of Designs," Technical Report 02-101, Computer Science Department, Colorado State University, Fort Collins, Colorado, 2002.

PROFESSIONAL AFFILIATIONS

Member, Institute of Electrical and Electronics Engineers

OTHER ACTIVITIES

Journal Editorial Board International Journal of Patterns (IJOP) 2007-2009.

NSF Panelist National Science Foundation (NSF), Foundations of Computing Processes and Artifacts (CPA), 2005.

Workshop Organizer	Chair of Fast Abstracts Tract at the 34th Annual IEEE Computer Software and Application Conference, 2010. Co-chair of the 5th International Workshop on Foundations and Practices of UML at ER 2009. Co-chair of Workshop on Using Metamodels to Support Model-Driven Development of Complex Systems at ICECCS 2005.
Program Committee	International Workshop on Domain Engineering at the 31st International Conference on Software Engineering (ICSE), 2009. International Workshop on Sensor Networks and Applications (SNA), 2008. IEEE/ACIS International Conference on Computer and Information Science (ICIS), 2007-2009. ACIS International Conference on Software Engineering, Artificial Intelligence, Networking, and Parallel/Distributed Computing (SNPD), 2008, 2009. International Workshop on Patterns Languages: Addressing Challenges (PLAC) 2007. International Workshop on Unified Data Mining Engine: Addressing Challenges (UDME) 2007. IEEE International Workshop Towards Stable and Adaptable Software Architectures (SASA), 2007. The 2nd IEEE International Workshop on Software Stability at Work (SSW), 2007. International Conference on Software Engineering Research, Management & Application (SERA), 2005-2007, 2009-2010. IEEE International Workshop on Software Patterns: Addressing Challenges (SPAC), 2007. IEEE/ACIS International Conference on Computer and Information Science (ICIS), 2006. International Workshop on the Applications of UML/MDA to Software Systems (UMSS), 2005, 2006. The 11th Asia-Pacific Software Engineering Conference (APSEC), 2004.
Book Chapter Reviewer	"Design Pattern Formalization Techniques", Idea Group Inc. 2006.
Journal Reviewer	IEEE Transactions on Software Engineering (TSE), 2009 Information and Software Technology (IST), 2008 Transactions on Aspect-Oriented Software Development (TAOSD), 2008. International Journal of Software Architecture, 2007. Software and System Modeling (SoSym), 2003-2009. Journal of Scientific and Practical Computing (JSPC), 2007. Journal of Visual Languages and Computing (JVLC), 2006. Journal of Research and Practice in Information Technology (JRPIT), 2006. Software Quality Journal (SQJ), 2004, 2009.
Conference Reviewer	ACM/IEEE International Conference on Model Driven Engineering Languages and Systems (MoDELS), 2002, 2004, 2006, 2008 International Workshop on Software Verification and Validation (SVV), 2005. Annual ACM Symposium on Applied Computing, Software Verification Track, (ACMSAC), 2006, 2008 ACM Conference on Computer and Communications Security (ACM CCS), 2004.
Invited Seminars	<i>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems,"</i> Western Michigan University, Kalamazoo, Michigan, 2008.

"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Sogang University, Seoul, South Korea, 2007.
"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Myongji University, Yougin, South Korea, 2007.
"Development of Academic Career in Software Engineering," Myongji University, Yongin, South Korea, 2006.
"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Korea University, Seoul, South Korea, 2006.
"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," George Mason University, Fairfax, Virginia, 2005.
"A Metamodeling Approach to Specifying Design Patterns," Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, 2004.
"UML for Software Engineers," National Security Research Institute (NSRI), Daejeon, South Korea, 2004.
"Towards Being Software Expert," Myongji University, Yongin, South Korea, 2003.
"Role-Based Metamodeling Language (RBML)," Myongji University, Yongin, South Korea, 2002.

Conference Participations NSF Cyber Trust PI Meeting, 2006-2008.
The 22nd Annual ACM Symposium on Applied Computing (ACMSAC) Seoul, Korea, 2007.
Pattern Languages of Programming Conference (PLoP), Portland, OR, 2006
Annual IEEE International Computer Software and Applications Conference (COMPSAC), Chicago, IL, 2003, 2006.
The 11th IEEE International Conference on Engineering of Complex Computer (ICECCS), Stanford, CA, 2006.
The 3rd ACIS International Conference on Software Engineering Research, Management & Applications (SERA), Mount Pleasant, MI, 2005.
The 6th International Conference on the Unified Modeling Language (UML), San Francisco, CA, 2003.

AWARDS, SCHOLARSHIPS AND LISTINGS

- Invited listing in Marquis Who's Who in America, 2009, 2010.
- UML2003 Student Travel Award, UML Conference 2003, San Francisco, California
- Best Oral Presenter Award, 2001, Third Annual Graduate Research and Creativity Symposium, Colorado State University, Fort Collins, Colorado
- Appreciation Award, 2000, McHugh Software International, Waukesha, Wisconsin
- Baekma Scholarship, 1994, Myongji University, South Korea

CERTIFICATES

National Computer Language Teaching License, 1992, South Korea
National Information Processing Certification, 1991, South Korea

REFERENCES

Robert B. France, Professor
Computer Science Department
Colorado State University
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Lunjin Lu, Associate Professor
Department of Computer Science and
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Jon Whittle, Professor
Department of Computing
Lancaster University
Bailrigg
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Wuwei Shen, Associate Professor
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