

DAE-KYOO KIM

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EDUCATION

Ph.D. 2004 Computer Science, Colorado State University, Fort Collins, Colorado
M.S. 1997 Computer Science, Western Michigan University, Kalamazoo, Michigan
B.E. 1995 Information and Communication Engineering, Myongji University, Seoul, South Korea

RESEARCH INTERESTS

- Model-based software development
- Pattern formalization
- Pattern-based model development
- Information Model Interoperability in Smart Grid
- Security in Smart Grid
- Aspect-oriented design development
- Component-based design development
- Specification of UML profiles
- Security policies
- Requirements validation
- Data model integration in Smart Grid

EMPLOYMENT

Aug. 2010 – Present **Associate Professor and Program Coordinator**, Department of Computer Science and Engineering, Oakland University, Rochester, Michigan.

Dec. 2011 – May 2012 **Visiting Professor**, Department of Computer Science, Sogang University, Seoul, South Korea.

Aug. 2004 – Aug. 2010 **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

Oakland University, Rochester, Michigan

- CSE 539 Software Engineering
- CSE 538 Software Verification and Testing
- CSE 530 Software Prototyping and Validation
- CSE 520 Fundamentals of Software Modeling
- CSE/CIT 337 Software Engineering and Practice
- CSE 231 Object-Oriented Computing II
- CSE/CIT 230 Object-Oriented Computing I

Colorado State University, Fort Collins, Colorado

- CS 414 Object-Oriented Design
- CS 166 Discrete Mathematics
- CS 110 Personal Computing

RESEARCH FUNDING

- "Development of Supporting Tools for Driver Assistance Systems of Autonomous Vehicles", PI, Magna Electronics, \$143,891, 02/11/2016-09/30/2016
- "Using Semantic Web Technologies to Predict Futuristic Trends by Analyzing Social Network Reviews", Co-PI, Amerilodge Group, LLC, \$5,000, 01/14/2014 – 01/15/2015
- Gift fund donated by Korean Ministry of Security and Public Administration, Republic of Korea, \$2,000, October, 2013.
- "Grid-Wise Information Base and Configuration Engine Development by Unifying IEC 61850 and IEC 61970", International Project: Oakland University (US), SISCO (US), Myongji University (Korea), Sejong University (Korea), Zenittek (Korea), PI of foreign institutions, Korea Institute of Energy Technology Evaluation and Planning (KETEP), \$1,380,000 (~~₩~~1,450,000,000) (OU: \$308,000), 12/01/2011 - 11/31/2014.

- “Improving Design Quality of Software Systems via Pattern-Based Transformation”, PI, University Research Committee (URC) Fellowship, Oakland University, \$8,500, 05/15/2010 - 8/15/2010.
- “An Aspect-Oriented Approach to Developing UML Models of Access Control Systems”, PI, The National Science Foundation (NSF), \$218,229, 01/01/2006 - 12/31/2008. (CCF-0523101)
- “Checking Design Pattern Conformance of Software Models”, PI, University Research Committee (URC) Fellowship, Oakland University, \$8,500, 05/15/2005 - 8/15/2005.
- “Legacy Transformation Using Pattern-Based UML Modeling”, PI, The Research Excellence Fund (REF), Oakland University, 01/2006 - 05/2006.

PUBLICATIONS (Authors marked with “**” are advised students.)

Google Scholar Citations: 1376 (as of 12/31/2015)

Books

- B1. **Dae-Kyoo Kim**, “Writing Scientific Papers”, 296 pages, 2014, ISBN-13: 978-1499287042, ISBN-10: 1499287046, eBook, also available in print by CreateSpace.
- B2. **Dae-Kyoo Kim**, “Writing Scientific Papers in English” (in Korean), 322 pages, 2014, ISBN: 978-0615965178, ISBN-10: 0615965127, eBook, also available in print by CreateSpace.

Journal Articles

- J1. Byunghun Lee* and **Dae-Kyoo Kim** “Harmonizing IEC 61850 and CIM for Connectivity of Substation Automation”, Computer Standards & Interfaces Journal, 2016, to be published, (SCIE, IF: 1.268)
- J2. Byunghun Lee*, **Dae-Kyoo Kim**, Hoysik Yang, and Sungsoo Oh, “Model Transformation between OPC UA and UML”, Computer Standards & Interfaces Journal, 2016, Elsevier, to be published, (SCIE, IF: 1.268)
- J3. Junha Lee*, **Dae-Kyoo Kim**, and Sooyong Park, “Decomposing Class Responsibilities Using Distance-Based Method Similarity”, Frontiers of Computer Science, Vol. 10, No. 4, pp. 612-630, 2016, Springer (SCIE, IF: 0.434)
- J4. **Dae-Kyoo Kim**, Dongwon Jeong, Lunjin Lu, Debatosh Debnath, and Hua Ming, "Opinions on Computing Education in Korean K-12 System: Higher Education Perspective", Computer Science Education Journal, Vol. 25, No. 4, pp. 371-389, Taylor & Francis, 2015.
- J5. Sukhoon Lee*, Dongwon Jeong, Doo-Kwon Baik, and **Dae-Kyoo Kim**, “Path Prediction Method for Effective Sensor Filtering in Sensor Registry System”, International Journal of Distributed Sensor Networks, Volume 2015, Article ID: 613473, 2015. (SCIE, IF: 0.66)
- J6. Su-Jin Choi*, **Dae-Kyoo Kim**, and Sooyong Park, “Identifying Correlations of Findings for Building Process Improvement Packages Using Graph Clustering”, Journal of Software: Evolution and Process, Vol. 27, No. 8, pp. 514-527, 2015, Wiley. (SCIE, IF: 1.32)
- J7. Byunghun Lee*, **Dae-Kyoo Kim**, Hyosik Yang, and Hyuksoo Jang “Role-Based Access Control for Substation Automation System Using XACML”, Information Systems, Vol. 53, pp. 237-249, Oct.-Nov. 2015, Elsevier. (SCI, IF: 1.24)
- J8. Byunghun Lee*, **Dae-Kyoo Kim**, Hyosik Yang, Hyuksoo Jang, Daeseung Hong, and Herbert Falk, “Unifying Data Types of IEC 61850 and CIM”, IEEE Transactions on Power Systems (TPS), Vol. 30, No. 1, pp. 448-456, 2014. (SCI, IF: 2.92)

- J9. Su-Jin Choi*, **Dae-Kyoo Kim**, Sooyong Park, "Process Correlation Analysis Model for Process Improvement Identification", *The Scientific World Journal (SWJ)*, Vol. 2014, Article ID: 104072, 2014. (SCIE, IF: 1.73)
- J10. Sangsig Kim*, **Dae-Kyoo Kim**, Lunjin Lu, Eunjee Song, "Building Hybrid Access Control by Configuring RBAC and MAC Features", *Journal of Information and Software Technology*, Vol. 56, No. 7, pp. 763-792, 2014. (SCIE, IF: 1.52)
- J11. **Dae-Kyoo Kim**, Byunghun Lee*, Sangsig Kim*, Hyosik Yang, Hyuksoo Jang, Deaseung Hong, and Herb Falk, "QVT-Based Model Transformation to Support Unification of IEC 61850 and IEC 61970", *IEEE Transactions on Power Delivery (TPD)*, Vol. 29, No. 2, pp. 598-606, 2014. (SCI, IF: 1.52)
- J12. Lunjin Lu and **Dae-Kyoo Kim**, "Required Behavior of Sequence Diagrams Semantics and Refinement", *ACM Transactions on Software Engineering and Methodology (TOSEM)*, Vol. 23, No. 2, 2014. (SCI, IF: 1.55)
- J13. **Dae-Kyoo Kim**, "Design Pattern-Based Model Transformation and Tool Support", *Journal of Software: Practice and Experience (JSPE)*, Vol. 45, No. 4, 2013. (SCIE, IF: 1.01)
- J14. Sangsig Kim*, **Dae-Kyoo Kim**, Lunjin Lu, Suntae Kim*, and Sooyong Park, "A Feature-Based Approach for Modeling Role-Based Access Control Systems", *Journal of Systems and Software (JSS)*, Vol. 84, No. 12, pp. 2035-2052, 2011. (SCIE, IF: 1.14)
- J15. Lunjin Lu, **Dae-Kyoo Kim**, Yuanlin Zhu, and Sangsig Kim*, "Verification of Structural Pattern Conformance Using Logic Programming", *Journal of Universal Computer Science (JUCS)*, Vol. 16, No. 17, pp. 2455-2474, 2010. (SCIE)
- J16. Suntae Kim*, **Dae-Kyoo Kim**, Lunjin Lu, and Sooyong Park, "Quality-Driven Architecture Development Using Architectural Tactics", *Journal of Systems and Software (JSS)*, Vol. 82, No. 8, pp. 1211-1231, 2009. (SCIE)
- J17. **Dae-Kyoo Kim**, Suntae Kim*, and Vanitha Sathyanarayanan, "Tool Support for Instantiating UML Models from Domain Models", *International Journal of Computer Science and Information Science (IJCSI)*, Vol.10, No. 1, pp. 26-36, 2009. (Invited paper, INSPEC/IEE)
- J18. **Dae-Kyoo Kim** and Wuwei Shen, "Evaluating Pattern Conformance of UML Models: A Divide-and-Conquer Approach and Case Studies", *Software Quality Journal (SQJ)*, Vol. 16, No. 3, pp. 329-359, 2008. (SCIE)
- J19. **Dae-Kyoo Kim** and Charbel El Khawand*, "An Approach to Precisely Specifying the Problem Domain of Design Patterns", *Journal of Visual Languages and Computing (JVLC)*, 2007. Vol. 18, No. 6, pp. 560-591. (SCI)
- J20. 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)
- J21. **Dae-Kyoo Kim**, Robert France, and Sudipto Ghosh, "A UML-Based Language for Specifying Domain-Specific Patterns," *Journal of Visual Languages and Computing (JVLC)*, Special Issue on Domain Modeling with Visual Languages, Vol. 15, No. 3-4, pp. 265-289, 2004. (Ranked the 2nd most downloaded for the journal in 2004, SCI)
- J22. 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)

Book Chapters

- BC1. Alaa Alaerjan* and **Dae-Kyoo Kim**, "Adopting DDS to Smart Grids: Towards Reliable Data Communication", *Communications in Computer and Information Science*, Editors: Markus Helfert, Cornel Klein, Brian Donnelan, and Oleg Gusikhin, Springer, to be published, 2016.
- BC2. **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.
- BC3. 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

- C1. Alaa Alaerjan* and **Dae-Kyoo Kim**, "Tailoring DDS to Smart Grids for Improved Communication and Control", the 5th International Conference on Smart Cities and Green ICT Systems (SMARTGREENS), Rome, Italy, 2016 (short paper, acceptance rate: 27%).
- C2. **Dae-Kyoo Kim**, Eunjee Song, and Huafeng Yu, "Introducing Attribute-Based Access Control to AUTOSAR", SAE World Congress and Exhibition, Paper ID: 2016-01-0069, Detroit, MI, 2016, accepted.
- C3. Junha Lee* and **Dae-Kyoo Kim**, and Jaerock Kwon, "Improving Performance of Java Programs Using Method Invocation Conversion", US-Korea Conference on Science, Technology, and Entrepreneurship, to appear, Atlanta, Georgia, 2015.
- C4. **Dae-Kyoo Kim** and Byunghun Lee*, "Pattern-Based Model Transformation of Sequence Diagrams Using QVT", In Proceedings of the 30th Annual ACM Symposium on Applied Computing (ACMSAC), Software Engineering Track, to appear, Salamanca, Spain, 2015 (acceptance rate: 24%, 25/104).
- C5. Junha Lee*, **Dae-Kyoo Kim**, and Sooyong Park, "Measuring Class Cohesion Based on Iterative Process Using External Class Relationships", In Proceedings of the 14th International Conference on Quality Software, Dallas, Texas, 2014. (6 pages, short paper, acceptance rate: 56%)
- C6. Su-Jin Choi*, **Dae-Kyoo Kim**, and Sooyong Park, "Identifying Finding Correlations for Building Process Improvement Packages Using Graph Clustering", In Proceedings of Conference on European System, Software & Service Process Improvement & Innovation (EuroSPI²), Luxembourg, to appear, 2014. (10 pages, acceptance rate: **35%**, 28/80)
- C7. **Dae-Kyoo Kim**, Hyosik Yang, Hyuksoo Jang, Deaseung Hong, Herb Falk, Sangsig Kim*, and Byunghun Lee*, "A Metamodeling Approach to Unifying IEC 61850 and IEC 61970", In Proceedings of the 4th IEEE PES Innovative Smart Grid Technologies Conference (ISGT), 2013, Washington DC. (acceptance rate: 23%, 141/609).
- C8. Lunjin Lu and **Dae-Kyoo Kim**, "Refinement Inference for Sequence Diagrams", In Proceedings of the 39th International Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM), pp. 432-444, 2013, Spindleruv Mlyn, Czech Republic. (acceptance rate: 31%, 37/117).
- C9. Sunuk Park*, **Dae-Kyoo Kim**, and Sooyong Park, "Pattern-Based Model Transformation Using QVT", the 19th Asia-Pacific Software Engineering Conference (APSEC), pp. 472-481, Hong Kong, 2012 (acceptance rate: 25.5%).
- C10. Youngdo Cho*, Hwangwook Kim*, **Dae-Kyoo Kim**, and Sooyong Park, "An Interaction-Driven

Approach to Identifying Functional Behaviors of Service Robot Systems", In Proceedings of International Conference on Engineering of Complex Computer Systems (ICECCS), pp. 109-118, Paris, France, 2012 (acceptance rate: 29%).

- C11. Sujin Choi*, **Dae-Kyoo Kim**, and Sooyong Park, "ReMo: A Recommendation Model for Software Process Improvement", In Proceedings of the 8th International Conference on Software and System Process (ICSSP), pp. 135-139, Zurich, Switzerland, co-located with ICSE 2012 (short paper, acceptance rate: 33% of full papers 16/48, 50% of short papers 11/22).
- C12. Sangsig Kim*, Yen-Ting Lee*, Yuanlin Zhu*, **Dae-Kyoo Kim**, Lunjin Lu, and Vijayan Sugumaran, "A Feature-Based Modeling Approach to Configuring Privacy and Temporality in RBAC", In Proceedings of the 23rd International Conference on Software Engineering and Knowledge Engineering (SEKE 2011), pp. 666-671, Miami, Florida, 2011 (acceptance rate: 31%).
- C13. Sangsig Kim*, **Dae-Kyoo Kim**, Lunjin Lu, Sooyong Park, and Suntae Kim, "A Feature-Based Modeling Approach for Building Hybrid Access Control Systems", In Proceedings of the 5th International Conference on Secure Software Integration and Reliability Improvement (SSIRI), pp. 88-97, Jeju, Korea, 2011 (acceptance rate: 34%).
- C14. Lunjin Lu and **Dae-Kyoo Kim**, "Required Behavior of Sequence Diagrams: Semantics and Refinement", In Proceedings of the 16th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS), pp. 127-136, Las Vegas, NV, 2011 (acceptance rate: 31%).
- C15. Wuwei Shen and **Dae-Kyoo Kim**, "Supporting Flexible Reification of Design Patterns", In Proceedings of the 17th Asia Pacific Software Engineering Conference (APSEC), pp. 127-136 Sydney, Australia, 2010 (acceptance rate: 31%, 47/151).
- C16. Suntae Kim*, **Dae-Kyoo Kim**, and Sooyong Park, "Tool Support for Quality-Driven Development of Software Architectures", In Proceedings of the 25th IEEE/ACM International Conference on Automated Software Engineering (ASE), pp. 127-130, Antwerp, Belgium, 2010, (short paper, acceptance rate: 17% of full papers 34/191, 34% of short papers 65/191).
- C17. **Dae-Kyoo Kim**, Lunjin Lu, and Sangsig Kim*, "A Verifiable Modeling Approach to Configurable Role-Based Access Control", In Proceedings of Fundamental Approaches to Software Engineering (FASE/ETAPS), pp. 188-202, Paphos, Cyprus, 2010. (acceptance rate: 25%, 24/96)
- C18. 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 (QSIC), pp. 161-166, Jeju, Korea, 2009. (short paper, acceptance rate: 28% of full papers 28/100, 59% of short papers, 59/100)
- C19. **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. (acceptance rate: 22.4%, 44/196)
- C20. 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)
- C21. **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)

- C22. 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. (acceptance rate: 30%)
- C23. **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. (acceptance rate: 33%)
- C24. **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. (acceptance rate: not published)
- C25. **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. (acceptance rate: 31.1%)
- C26. **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. (acceptance rate: 67%)
- C27. **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%)
- C28. 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. (acceptance rate: 27.3%)
- C29. 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. (acceptance rate: 29.5%)
- C30. **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. (acceptance rate: 23%)
- C31. 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)
- C32. **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. (acceptance rate: not published)
- C33. **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. (acceptance rate: 44%)

Workshop Papers

- W1. **Dae-Kyoo Kim**, Jungwoo Ryoo, and Suntae Kim, "Building Sustainable Software by Preemptive Architectural Design Using Tactic-Equipped Patterns", *In Proceedings of the 1st International Software Assurance Workshop (SAW)*, co-located with ARES, Fribourg, Switzerland, 2014. (6 pages, acceptance rate: not published)
- W2. Su-Jin Choi*, **Dae-Kyoo Kim**, Sooyong Park, Junha Lee, and Soojin Park, "Recommending Process Improvement Packages using Direct and Indirect Relationships of Activities", *In Proceedings of Workshop on Recommendation Systems for Software Engineering (RSSE)*, co-located with ICSE, to appear, 2014. (5 pages, acceptance rate: not published)
- W3. **Dae-Kyoo Kim**, Jungwoo Ryoo, and Suntae Kim, "Building Sustainable Software by Preemptive Architectural Design Using Tactic-Equipped Patterns", *In Proceedings of the 1st International Software Assurance Workshop (SAW)*, co-located with ARES, Fribourg, Switzerland, 2014. (6 pages, acceptance rate: not published)
- W4. Su-Jin Choi*, **Dae-Kyoo Kim**, Sooyong Park, Junha Lee, and Soojin Park "Recommending Process Improvement Packages using Direct and Indirect Relationships of Activities", *Workshop on Recommendation Systems for Software Engineering (RSSE)*, to appear, 2014.
- W5. **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.
- W6. 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.
- W7. **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.
- W8. **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.
- W9. 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

- T1. Junha Lee*, Donghun Lee*, **Dae-Kyoo Kim**, and Sooyong Park, "A Semantic-Based Approach for Detecting and Decomposing God Classes", *CoRR abs/1204.1967*, 2012. (12 pages)
- T2. Lunjin Lu, and **Dae-Kyoo Kim**, "Semantics-based Refinement of Mandatory Behavior of Sequence Diagrams", *CoRR abs/1003.1160*, 2010. (14 pages)
- T3. **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)
- T4. **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)

- T5. 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)
- T6. 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. (15 pages)

Papers under submission

- S1. Byunghun Lee* and **Dae-Kyoo Kim** "Harmonizing Connectivity for Substation Automation with Profiling Tool and Case Study", International Journal of Electrical Power and Energy Systems (SCIE indexed), under first revision, submitted in March 2016.
- S2. Dae-Kyoo Kim and Byunghun Lee, "Design-Pattern Based Model Transformation Supported by QVT", Journal of Software and Systems (SCIE indexed), under first revision, submitted in January 2016.
- S3. S3. Byunghun Lee, Dae-Kyoo Kim, Hoysik Yang, and Sungsoo Oh, "Transforming OPC UA Models to UML Models", Computer Standards & Interfaces Journal (SCIE indexed), under second review, submitted in April 2016.
- S4. Dae-Kyoo Kim and Alaa Alaerjan, "Towards Interoperability of Smart Grid", IEEE Communications Magazine (SCI indexed), under first review, submitted in April 2016.
- S5. Dhrgam AL Kafaf and Dae-Kyoo Kim, "Web Service-Based Self-Adaptive Systems", Computer and Electrical Engineering (SCI indexed), under first review, submitted in August 2016.

Papers & books under preparation

- P1. Lunjin Lu and **Dae-Kyoo Kim**, "Conformance Inference for Sequence Diagrams", Journal of Systems and Software Modeling (SCIE indexed), 2016.
- P2. **Dae-Kyoo Kim**, "Role-Based Metamodeling Techniques for Designing Reusable Software Artifacts", MKP Technologies, contracted for publication in 2017.

PATENTS

International Patents

- 1. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "System for Metamodeling Transformation", 2014, Document number: PCT-KR2014-001483.
- 2. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "System for Metamodeling Unification", 2014, Document number: PCT-KR2014-001484.
- 3. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "Method for Metamodeling Transformation", 2014, Document number: PCT-KR2014-001485.

US Patents

- 4. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "System for Metamodeling Transformation", 2014, Document number: 14/404,237.
- 5. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "System for Metamodeling Unification", 2014, Document number: 14/404,373.

6. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "Method for Metamodeling Transformation", 2014, Document number: 14/404,385
7. Sooyong Park, Sujin Choi*, and **Dae-Kyoo Kim**, "Apparatus and Method for Recommending Software Process Improvement", 2013, Application number: 13/906,008, Confirmation number: 1932

Korean Patents

1. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "Metamodeling Transformation System and Method", Application number: 10-2013-0108723
2. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "Metamodeling Integration System", Application number: 10-2013-0108724
3. Hyuk-Soo Jang, Hyo-Sik Yang, Seok-Yeol Yoon, **Dae-Kyoo Kim**, and Herbert Falk, "Metamodeling Integration Method", Application number: 10-2013-0108725
4. Sooyong Park, Sujin Choi*, and **Dae-Kyoo Kim**, "Recommendation Model for Software Process Improvement (ReMo)", 2013, Application number: 10-2013-0060204
5. Sooyong Park, Youngdo Cho*, Hwangwook Kim*, and **Dae-Kyoo Kim**, "Apparatus and Method for Identifying Functional Behaviors of Service Robot Systems", 2012, Application Number: 10-2012-0067022

SOFTWARE DEVELOPMENT

1. *QVT Model Transformer*: A tool for transforming IEC 61850/IEC 61970 to Unified Model or vice versa, March, 2013.
2. *RBAC Feature Configurator*: Configuring and composing RBAC features, Rational Software Architect plug-in, developed in Java, 2011.
3. *ArchInst*: Configuring and composing architectural tactics, Rational Software Architect plug-in, developed in Java, 2009.
4. *PatMoRe*: Refactoring design patterns, Rational Rose plug-in, developed in C++, 2008.
5. *RBML-CC*: Pattern conformance checking, Rational Rose plug-in, developed in C++, 2007.
6. *RBML-Pl*: Instantiating design patterns, Rational Rose plug-in, developed in C++, 2004.

STUDENT ADVISING

Oakland University, Rochester, Michigan

Byunghun Lee (Ph.D. Student, Graduated in 2016, Currently at Magna)
Dhrgam Al Kafaf (Ph.D. Student)
Alaa Alaerjan (Ph.D. Student)
Marci Wojcik (Ph.D. Student)
Sangsig Kim (Ph.D., Graduated in 2013, Currently at Magna)
Vanitha Sathyanarayanan (M.S., Graduated in 2008)
Charbel El Khawand (M.S., Graduated in 2005)

Sogang University, Seoul, Korea

Sujin Choi (Ph.D., Graduated in 2014, Senior researcher at Samsung)
Junha Lee (Ph.D., Graduated in 2014, Visiting scholar at Kettering University)
Hwangwook Kim (Ph.D. on leave)
Youngdo Cho (M.S., Graduated in 2012)
Sunuk Park (M.S., Graduated in 2012)
Donghun Lee (M.S., Graduated in 2012)
Suntae Kim (Ph.D., Graduated in 2011, Assistant Professor at Chunbuk National University)

VISITING SCHOLARS

Kisun, Kang, Researcher at Ministry of Security and Public Administration, July 2013 – Dec. 2013.
Jooseok Lee, Researcher at ZenithTek, March 2013 – May 2013.
Dr. Dongwon Jeong, Professor at Kunsan National University, Korea, Feb. 2013 – Dec. 2013
Junha Lee, Ph.D. Student at Sogang University, Korea, Sept. 2012 – Dec. 2012
Sujin Choi, Ph.D. Student at Sogang University, Korea, Oct. 2012 – Dec. 2012
Suntae Kim, Ph.D. Student at Sogang University, Korea, Jan. 2008 – Jun. 2008
Dr. Wankwon Lee, Professor at Jeonju University, Korea, Jan. 2006 – Dec. 2006

PROFESSIONAL AFFILIATIONS

Senior Member, Institute of Electrical and Electronics Engineers (IEEE)

OTHER ACTIVITIES

| | |
|-------------------------|---|
| NSF Panelist | National Science Foundation (NSF), Foundations of Computing Processes and Artifacts (CPA), 2005. |
| Journal Editorial Board | Advances in Software Engineering 2012-Present. The Scientific World Journal 2012-Present. International Journal of Computer Science and Information Technology (JCSIT), 2008-2011. International Journal of Patterns (IJOP) 2007-2009. |
| Journal Guest Co-Editor | Journal of Software: Practice and Experience (SP&E), Special Issue on Software Reuse, 2015. Journal of Universal Computer Science (JUCS), Special Issue on Foundations and Practices of Unified Modeling Language (UML), 2010. |
| Workshop Organizer | Workshop Chair at Asia-Pacific Software Engineering Conference (APSEC), 2015. Co-chair of Workshop on IEC 61850/61970 UML Unification, 2013. Chair of Fast Abstracts Tract at the 34th Annual IEEE Computer Software and Application Conference (COMPSAC), 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 Conference on Information Science and Applications (ICISA), 2016. International Conference on Information Science and Security (ICISS), 2015. The ACM/SIGAPP Symposium on Applied Computing (ACMSAC), 2015-6. The 1st International Conference on Software Security and Assurance (ICSSA), 2015. International Software Assurance Workshop (SAW), 2014 and 2015. International Conference on Computational Intelligence and Software Engineering (CiSE), 2014. ACIS International Symposium on Software and Network Engineering (SSNE) 2011. Workshop on Domain Specific Engineering at CAiSE 2011-2012. Workshop on Domain Engineering at ER 2010. Annual IEEE Computer Software and Application Conference (COMPSAC), 2010-2012. International Workshop on Visual Formalisms for Patterns (VFfP), 2009, 2010. |

International Workshop on Domain Engineering at 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), 2006-2009, 2011.
 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, 2012, 2014, 2015.
 IEEE International Workshop on Software Patterns: Addressing Challenges (SPAC), 2007.
 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 Frontiers of Information Technology & Electric Engineering (SCIE indexed), 2015.
 The Computer Journal (SCIE indexed), 2015.
 Journal of Software: Evolution and Process (SCIE indexed), 2013.
 Journal of Systems and Software (SCIE indexed), 2013, 2015.
 Scientific World Journal (SCIE indexed), 2013, 2014.
 Journal of Engineering (SCI indexed), 2013.
 Computer Standards & Interfaces (SCIE indexed), 2011.
 IEEE Transactions on Software Engineering (TSE), 2009.
 Information and Software Technology (SCIE indexed), 2008.
 Transactions on Aspect-Oriented Software Development (SCIE indexed), 2008.
 International Journal of Software Architecture (SCIE indexed), 2007.
 Software and System Modeling (SCIE indexed), 2003-2010, 2013.
 Journal of Scientific and Practical Computing (SCIE indexed), 2007.
 Journal of Visual Languages and Computing (SCI indexed), 2006.
 Journal of Research and Practice in Information Technology (SCIE indexed), 2006.
 Software Quality Journal (SCIE indexed), 2004, 2009.

Conference Reviewer International Conference on Software Engineering (ICSE), 2013.
 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.

| | |
|---------------------------|---|
| Keynote Speaker | "Towards Full-Scale Automation of Pattern-Based Model Transformation: From Pattern Applicability to Pattern Conformance", Korean Conference on Software Engineering (KCSE), Kangwon, Korea, 2012. |
| Invited Seminars | <p>"Grid-Wise Information Base and Configuration Engine Development for Unifying IEC 61850 and IEO 61970", The Korean Computer Scientists and Engineers Association in America (KOCSEA), Yorktown Heights, NY, 2014.</p> <p>"Grid-Wise Information Base and Configuration Engine Development for Unifying IEC 61850 and IEO 61970", Korean Electric Power Research Institute (KEPRI), Daejeon, Korea, 2014.</p> <p>"Unified Meta-Modeling", Myongji University, 2013.</p> <p>"Grid-Wise Information Base and Configuration Engine Development for Unifying IEC 61850 and IEO 61970", Western Michigan University, 2013.</p> <p>"Career Development as a Software Engineer", Sejong University, 2012.</p> <p>"Development of Highly Configurable Access Control System", Sogang University, Seoul, Korea, 2011.</p> <p>"UML Mode-based Transformation of IEC 61850 and IEC 61970 CIM for Smart Grid", Myongji University, Yongin, Korea, 2011.</p> <p>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems" Western Michigan University, Kalamazoo, Michigan, 2008.</p> <p>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Sogang University, Seoul, Korea, 2007.</p> <p>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Myongji University, Yongin, Korea, 2007.</p> <p>"Development of Academic Career in Software Engineering," Myongji University, Yongin, Korea, 2006.</p> <p>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," Korea University, Seoul, Korea, 2006.</p> <p>"An Aspect-Oriented Approach to Developing UML Models of Access Control Systems," George Mason University, Fairfax, Virginia, 2005.</p> <p>"A Metamodeling Approach to Specifying Design Patterns," Korea Advanced Institute of Science and Technology (KAIST), Daejeon, South Korea, 2004.</p> <p>"UML for Software Engineers," National Security Research Institute (NSRI), Daejeon, Korea, 2004.</p> <p>"Towards Being Software Expert," Myongji University, Yongin, Korea, 2003.</p> <p>"Role-Based Metamodeling Language (RBML)," Myongji University, Yongin, Korea, 2002.</p> |
| Conference Participations | <p>International Conference on Information Science and Applications (ICISA), 2016.</p> <p>International Conference on Information Science and Security (ICISS), 2015.</p> <p>The International Conference on Software Security and Assurance (ICSSA), 2015.</p> <p>The Annual ACM Symposium on Applied Computing (ACMSAC), 2015-6.</p> <p>The International Conference on Quality Software (QSIC), 2014.</p> <p>International Software Assurance Workshop (SAW), co-located with ARES (SAW), 2014-5.</p> <p>International Conference on Computational Intelligence and Software Engineering (CiSE), 2014.</p> <p>Annual IEEE Computer Software and Application Conference (COMPSAC), 2010-2.</p> <p>ACIS International Symposium on Software and Network Engineering (SSNE) 2011.</p> <p>International Workshop on Domain Engineering (DE) at CAiSE, 2009.</p> <p>Conference on European System, Software & Service Process Improvement & Innovation (EuroSPI), Luxembourg, 2014.</p> |

Energy Tech Insight, Coex, Korea, 2014.
IEC 61850 Technical Committee (TC) 75 Meeting, Mackinaw Island, Michigan, 2013.
Energy Tech Insight, Coex, Korea, 2013.
The 4th Conference on Smart Grid Technologies Conference (ISGT), Washington D.C., 2013
The PI meeting of International R&D Collaboration hosted by Korea Institute of Energy Technology Evaluation and Planning (KETEP), 2012.
The 5th International Conference on Secure Software Integration and Reliability Improvement (SSIRI), Jeju, Korea, 2011.
Fundamental Approaches to Software Engineering (FASE/ETAPS), Paphos, Cyprus, 2010.
ABET Program Assessment Workshop, Las Vegas, 2009.
The 10th International Conference on Software Reuse (ICSR), Beijing, China, 2008.
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

- Founder's Day Honoree in Research, Oakland University, 2013.
- SECS Service Award, Oakland University, 2011.
- IEEE Appreciation Certificate, 2010.
- Elevation to IEEE Senior Member, 2010.
- Invited listing in Marquis Who's Who in America, 2009, 2010, 2015.
- 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, Korea.

CERTIFICATES

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

REFERENCES

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