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# Yuehua (Jane) Lin

## Research Interests

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Model-Driven Software Development, Model Transformation and Supporting Tools, Validation and Verification of Model Transformation, Aspect-Oriented technologies, Testing and Debugging, Software Composition, Software Evolution, Generative Programming

## Education

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2002-present, University of Alabama at Birmingham, AL

- Ph.D. in Computer Science, GPA 4.0/4.0, Advisor: Jeff Gray

*Thesis: A Model Transformation Approach to Automated Model Construction and Evolution*

2000-2002, Auburn University, Auburn, AL

- M.S. in Computer Science, GPA 3.9/4.0, Advisor: Juan Gilbert

*Thesis: Online Advertising Models: New Approaches and Effectiveness Study*

1993-1996, Nanjing Univ. of Aeronautics and Astronautics, China

- M.S. in Industrial Engineering, GPA 3.6/4.0

1989-1993, Nanjing Univ. of Aeronautics and Astronautics, China

- B.S. in Mechanical Engineering, GPA 3.6/4.0

## Experience

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### Research Experience

2005–present, Dept. of Computer & Information Sciences, **University of Alabama at Birmingham**, AL  
*Graduate Research Assistant*

- Work on an NSF project, focusing on performance analysis by utilizing various technologies such as model-driven and aspect-oriented approaches.

2002–2005, Dept. of Computer & Information Sciences, **University of Alabama at Birmingham**, AL  
*Graduate Research Assistant*

- Worked on a DARPA PCES project, focusing on model transformation and model transformation testing and debugging.
- Constructed a model transformation framework that supports automated construction and evolution of domain models.
- Developed testing and debugging facilities for verification and validation of model transformations.

1996–2000, **Shanghai University of Economics & Finance**, China

*Assistant Professor*

- Worked on several projects on Enterprise Innovation, Management and Marketing.

### Teaching Experience

2002-2006, Dept. of Computer & Information Sciences, **University of Alabama at Birmingham**, AL  
*Graduate Teaching Assistant*

- Assisted in Database, Compiler Design and Programming Languages courses.
- Instructor for Object-Oriented Programming in C++ lab and Computing Fundamentals lab.

2001–2002, Dept. of Computer Science & Software Engineering, **Auburn University**, AL  
*Graduate Teaching Assistant*

- Instructor for Java programming lab
- Assisted in teaching advanced database course.

1996–2000, Shanghai University of Economics & Finance, China

*Assistant Professor*

- Offered courses: Management Information System, Enterprise Resource Planning (ERP) and Decision Support Systems.

### Industrial Experience

2005 May – August, **MedMined Inc.**, Birmingham, AL

*Software Engineer (Summer Intern)*

- Analyzed and improved Transact-SQL legacy systems on data transformation.
- Developed a VB.Net application for automatically generating Microsoft Word reports by retrieving information from a database.

1995–1996, **Nanjing Jincheng Motorcycle Group**, China

*System Engineer*

- Specified system requirements of Cost Management System and proposed conceptual and detailed designs.

### Publications

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#### Book Chapters

- Yuehua Lin, Jing Zhang, and Jeff Gray, “**A Framework for Testing Model Transformations**,” in *Model-driven Software Development*, (Sami Beydeda, Matthias Book, and Volker Gruhn, eds.), Springer, ISBN: 3-540-25613-X, 2005, Chapter 10, pp. 219-236, 2005.
- Jing Zhang, Yuehua Lin, and Jeff Gray, “**Generic and Domain-Specific Model Refactoring using a Model Transformation Engine**,” in *Model-driven Software Development*, (Sami Beydeda, Matthias Book, and Volker Gruhn, eds.), Springer, ISBN: 3-540-25613-X, 2005, Chapter 9, pp. 199-218, 2005.

#### Journal papers

- Yuehua Lin, Jeff Gray, Jing Zhang, Steve Nordstrom, Aniruddha Gokhale, Sandeep Neema, and Swapna Gokhale, “**Model Replication: Transformations to Address Model Scalability**,” conditionally accepted – pending revision, *Software: Practice and Experience*.
- Yuehua Lin, Jeff Gray and Frédéric Jouault, “**DSMDiff: A Differencing Tool for Domain-Specific Models**,” conditionally accepted, *European Journal of Information Systems* (Special Issue on Model-Driven Systems Development).
- Jing Zhang, Jeff Gray, Yuehua Lin, and Robert Tairas, “**Aspect Mining from a Modeling Perspective**,” accepted to be published in *International Journal of Computer Applications in Technology*, Special Issue on Concern Oriented Software (Hongji Yang, William Chu, and Jianjun Zhao, eds.), Spring 2007.
- Jeff Gray, Yuehua Lin, and Jing Zhang, “**Automating Change Evolution in Model-Driven Engineering**,” *IEEE Computer (Special Issue on Model-Driven Engineering)*, February 2006, pp. 51-58.
- Krishnakumar Balasubramanian, Aniruddha Gokhale, Yuehua Lin, Jing Zhang, and Jeff Gray, “**Weaving Deployment Aspects into Domain-Specific Models**,” *International Journal on Software Engineering and Knowledge Engineering*, June 2006, vol. 16, no.3, pp. 403-424.
- Juan E. Gilbert and Yuehua Lin, “**An Effectiveness Study of Online Advertising Models**,” *Entrepreneurship Policy Journal*, April 2005, vol. 2, pp. 120-129.
- [Under Review] Jeff Gray, Sandeep Neema, Jing Zhang, Yuehua Lin, Ted Bapty, Aniruddha Gokhale, and Douglas C. Schmidt, “**Concern Separation for Adaptive QoS Modeling in**

**Distributed Real-Time Embedded Systems,”** submitted to the *Journal of Software and Systems Modeling*.

#### Refereed Conference Papers

- [Selected as one of the Best Papers of Models 2005] Jeff Gray, Yuehua Lin, Jing Zhang, Steve Nordstrom, Aniruddha Gokhale, Sandeep Neema, and Swapna Gokhale, “**Replicators: Transformations to Address Model Scalability,**” *Model Driven Engineering Languages and Systems (MoDELS) (formerly the UML series of conferences)*, Springer-Verlag LNCS 3713, Montego Bay, Jamaica, October 2005, pp. 295-308.
- Jeff Gray, Jing Zhang, Yuehua Lin, Hui Wu, Suman Roychoudhury, Rajesh Sudarsan, Sandeep Neema, Feng Shi, and Ted Bapty, “**Model-Driven Program Transformation of a Large Avionics Application,**” *Generative Programming and Component Engineering (GPCE 2004)*, Springer-Verlag LNCS, Vancouver, BC, October 2004, pp. 361-378
- Song Zhou, Chuanxi Xu, Hui Wu, Yuehua Lin, Jing Zhang, Juanqin Wang, Jeff Gray, and Barrett Bryant, “**E-R Modeler: A Database Modeling Toolkit for Eclipse,**” *42nd Annual ACM SE Conference*, Huntsville, AL, April 2004, pp. 160-165.
- Suman Roychoudhury, Jeff Gray, Hui Wu, Jing Zhang, and Yuehua Lin, “**A Comparative Analysis of Metaprogramming and Aspect-Orientation,**” *41st Annual ACM SE Conference*, Savannah, GA, March 2003, pp. 196-201.

#### Refereed Workshop Papers

- Arundhati Kogekar, Dimple Kaul, Aniruddha Gokhale, Paul Vandal, Upsorn Praphamontriphong, Swapna Gokhale, Jing Zhang, Yuehua Lin, and Jeff Gray, “**Model-driven Generative Techniques for Scalable Performability Analysis of Distributed Systems,**” *IPDPS Workshop on Next Generation Systems*, Rhodes Island, Greece, April 2006.
- Jing Zhang, Jeff Gray, and Yuehua Lin, “**A Model-Driven Approach to Enforce Crosscutting Assertion Checking,**” *27th ICSE Workshop on the Modeling and Analysis of Concerns in Software (MACS)*, St. Louis, MO, May 2005.
- Yuehua Lin, Jing Zhang, and Jeff Gray, “**Model Comparison: A Key Challenge for Transformation Testing and Version Control in Model Driven Software Development,**” *OOPSLA Workshop on Best Practices for Model-Driven Software Development*, Vancouver, BC, October 2004.
- Jing Zhang, Jeff Gray, and Yuehua Lin, “**A Generative Approach to Model Interpreter Evolution,**” *4th OOPSLA Workshop on Domain-Specific Modeling*, Vancouver, BC, October 2004, pp. 121-129.
- Jeff Gray, Yuehua Lin, and Jing Zhang, “**Aspect Model Weavers: Levels of Supported Independence,**” *Middleware 2003: Workshop on Model-driven Approaches to Middleware Applications Development*, Rio de Janeiro, Brazil, June 2003.

#### Journal and Conference Abstracts

- Yuehua Lin, “**A Testing Framework for Model Transformations (Abstract),**” *The Journal of the Alabama Academy of Science*, 2005.
- Yuehua Lin, “**Aspect-Oriented Weaving of Domain Models (Abstract),**” *The Journal of the Alabama Academy of Science*, 2003.
- Jeff Gray, Yuehua Lin, and Jing Zhang, “**Transformations to Support Model Evolution and Scalability,**” *Conference of the Mid-Southeast Chapter of the ACM*, Gatlinburg, TN, November 2005.
- Yuehua Lin, “**An Aspect Weaver for Domain Model Transformation,**” *Conference of the Mid-Southeast Chapter of the ACM*, Gatlinburg, TN, November 2003.
- Jeff Gray, Yuehua Lin, and Jing Zhang, “**Degrees of Independence in Aspect-Oriented Modeling to Support Two-Level Weaving,**” *Real-Time CORBA Component Model Workshop*, Washington University, St. Louis, MO, March 2003.

### Publications in Chinese

- Yuehua Lin, “**The Challenge of CIM in Cost Management**,” *Industrial Accounting*, December 1997.
- Jianlin Zhou and Yuehua Lin, *Management*, LiXing Accounting Publishing Co., April 1999.

### Professional Activities

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#### Doctoral Symposia

- Yuehua Lin, “**Transformations to Automate Model Change Evolution**,” *21st ACM Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA '06)*, Portland, OR, October 2006.
- Yuehua Lin, “**A Comprehensive Model Transformation Approach to Automatic Model Construction and Evolution**,” *20th IEEE/ACM International Conference on Automated Software Engineering*, Long Beach, CA, November 2005.
- Yuehua Lin, “**C-SAW: An Aspect-Oriented Model Transformation Engine**,” *3rd Annual Southeastern Software Engineering Conference*, Huntsville, AL, March 2004.

#### Posters

- Yuehua Lin, “**Transformations to Automate Model Change Evolution**,” *21st ACM Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA '06)*, Portland, OR, October 2006.
- Yuehua Lin and Jeff Gray, “**A Comprehensive Model Transformation Approach to Automated Model Construction and Evolution**,” *20th ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)*, San Diego, CA, October 2005.
- Yuehua Lin, Song Zhou, Chuanxi Xu, Hui Wu, Jing Zhang, Juanqin Wang, Jeff Gray, and Barrett Bryant, “**E-R Modeler: A Database Modeling Toolkit for Eclipse**,” *Special Event (hosted by IBM): Eclipse Technology eXchange (OOPSLA '03)*, Anaheim, CA, October 2003.

#### Demonstrations

- Jeff Gray, Suman Roychoudhury, Jing Zhang, and Yuehua Lin, “**C-SAW and GenAWeave: A Two-Level Aspect Weaving Toolsuite**,” *AOSD '05: International Conference on Aspect-Oriented Software Development*, Chicago, IL, March 2005.
- Jeff Gray, Jing Zhang and Yuehua Lin, “**Two-Level Weaving to Support Evolution in Bold Stroke**,” *DARPA PCES PI Meeting December 2003 / CORBA Real-Time CCM Meeting*, Nashville, TN, December 2003.

#### Presentations

- “**An Aspect Weaver for Domain Model Transformation**,” *Conference of the Mid-Southeast Chapter of the ACM, Gatlinburg, TN*, November 2003.
- “**Aspect-Oriented Weaving of Domain Models**,” *The 80th Annual Meeting of the Alabama Academy of Science*, March 2003.
- “**A Testing Framework for Model Transformations**,” *The 82nd Annual Meeting of the Alabama Academy of Science*, March 2005.
- “**Aspect-Oriented Weaving of Domain Models**,” *UAB Graduate Research Day*, March 2003.
- “**C-SAW: An Aspect-Oriented Model Transformation Engine**,” *UAB Graduate Research Day*, March 2004.
- “**A Testing Framework for Model Transformations**,” *UAB Graduate Research Day*, March 2005.
- “**Transformations to Support Model Scalability**,” *UAB Graduate Research Day*, March 2006.

**Reviewer-books**

- *Model-driven Software Development - Volume II of Research and Practice in Software Engineering*, Springer-Verlag, 2005.

**Reviewer-journals**

- *IEEE Transaction on Software Engineering*, 2006
- *Transactions on Aspect-Oriented Software Development*, 2006
- *Software: Practice & Experience*, 2006

**Reviewer-conferences**

- *7th International Conference on the Unified Modelling Language: Modelling Languages and Applications (UML)*, 2004
- *11th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS)*, 2005
- *International Symposium on Distributed Objects and Applications (DOA)*, 2005
- *9th IEEE International Enterprise Distributed Object Computing Conference (EDOC)*, 2005
- *Model Transformation Track at the Symposium on Applied Computing*, 2006

**Reviewer-workshops**

- *The Aspect-Oriented Modeling workshop*, held at AOSD, Vancouver, BC, March 2007
- *Eclipse Technology Exchange Workshop*, held at OOPSLA, 2005
- *8th Workshop on Aspect-Oriented Modeling*, held at AOSD, 2006
- *1st International Workshop on Global Integrated Model Management*, held at ICSE, 2006

**Professional Memberships:**

- Member of Association for Computing Machinery (ACM)
- Member of ACM SIGSOFT
- Student Member of IEEE

**Honors and Awards**

- The Dean's Award for Outstanding Student in the School of National Science and Mathematics, 2007
- Outstanding Graduate Student in the CIS Department at the doctoral level, 2007
- The Department's nominee for the Barker Award for Outstanding Graduate Student, 2007
- \$1000 Travel Grant for attending the CRA-W Managing the Academic Career for Faculty Women at Undergraduate Computer Science and Engineering Institutions Workshop, March 2007
- \$1000 Travel Grant for attending OOPSLA Doctoral Symposium, October 2006
- \$500 Travel Grant for attending OOPSLA Student Research Competition, October 2006
- \$250 travel grant from ACM SIGSOFT CAPS to attend Doctoral Symposium of ASE 2005, November 2005
- Student Research Grant sponsored by the Alabama Academy of Science, 2004-2005
- Passed the Level 1 Ph.D. Qualifier "With Distinction" – January 2003