

Nan Niu

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EMPLOYMENT

- Assistant Professor** (tenure-track) 2014 – Present
Department of Electrical Engineering and Computing Systems, University of Cincinnati, OH, USA
- Assistant Professor** (tenure-track) 2009 – 2014
Department of Computer Science and Engineering, Mississippi State University, MS, USA
- Software Developer** 1999 – 2001
Lenovo Group Limited, Beijing, PR China

EDUCATION

- University of Toronto**, Toronto, Canada 2004 – 2009
Ph.D., Computer Science
Thesis: *Extractive Product Line Requirements Engineering*
Supervisor: Steve M. Easterbrook
Thesis Committees: John Mylopoulos, Eric Yu, Arno Jacobsen, Krzysztof Czarnecki
- University of Alberta**, Edmonton, Canada 2001 – 2004
M.Sc., Computing Science
Thesis: *Formally Understanding the Behavior of a Framework's Transaction Management*
Supervisor: H. James Hoover
Thesis Committees: Ken Wong, James Miller
- Beijing Institute of Technology**, Beijing, PR China 1995 – 1999
B.Eng., Computer Science and Engineering

RESEARCH INTERESTS

Software Engineering, Information Seeking, Human-Centered Computing

HONORS AND AWARDS

- CAREER Award**, U.S. National Science Foundation 2014 – 2019
- Outstanding Team Performance** (1st place), ADTRAN Senior Design Showcase 2012
- StatePride Faculty Award**, Mississippi State University 2011
- Elected to **Upsilon Pi Epsilon** (Honor Society in Computing Sciences), Mississippi State Univ. 2010
- Doctoral Thesis Completion Scholarship**, University of Toronto 2008 – 2009
- Mary Louise Imrie Graduate Student Award**, University of Alberta 2003 – 2004
- Best Paper Award** (4th IEEE Int'l Workshop on Web Site Evolution, Montreal, Canada) 2002
- J Gordin Kaplan Travel Award**, University of Alberta 2002
- Most Innovative Group Award**, Lenovo Group Limited (Beijing, PR China) 2000

GRANTS

University of Cincinnati (2014 – Present)

1. **Nan Niu** (PI), “CAREER: Linking the Solo and Social Levels in Software Engineering”, *U.S. National Science Foundation* (NSF), **\$400,000**; 9/1/2014-8/31/2019.

Mississippi State University (2009 – 2014)

1. **Nan Niu** (PI), “SHF: EAGER: Clustering Programming Artifacts to Enrich Code Foraging Environment”, *U.S. National Science Foundation* (NSF), **\$80,000**; 5/1/2012-4/30/2014.
2. **Nan Niu** (PI), “Flexible Semantic Merging of Multiple Versions and Variants of Software”, *U.S. Army Engineer Research and Development Center* (ERDC), **\$72,000**; 10/1/2010-9/30/2012.
3. Mingzhou Jin, **Nan Niu** (Co-PI), “Decision Support Tools for Transportation Resilience and Security”, *U.S. Department of Transportation* (DOT), \$712,500 (Dr. Niu’s share: **\$101,650**); 9/14/2009-8/15/2012.
4. Mingzhou Jin, **Nan Niu** (Co-PI), “SERRI: Real-Time Identification and Monitoring of Barge-Carried Hazardous Commodities”, *U.S. Department of Homeland Security* (DHS), \$170,000 (Dr. Niu’s share: **\$35,611**); 5/16/2011-8/31/2012.
5. **Nan Niu** (PI), Gary Bradshaw, “Information Foraging in Software Maintenance”, Cross-disciplinary Research Facilitation Grant Program, Office of Research and Economic Development, *Mississippi State University*, **\$4,000**; 10/1/2011-9/30/2012.
6. **Nan Niu** (PI), David Dampier, Kui Xie, “Integrating Problem-Based Learning in Undergraduate Software Testing Course”, Schillig Special Teaching Projects Program, Office of Academic Affairs, *Mississippi State University*, **\$2,500**; 4/1/2011-4/30/2012.
7. **Nan Niu** (PI), Ed Allen, “Software Engineering of the Mississippi Integrated Education and Workforce Longitudinal Data System”, National Strategic Planning & Analysis Research Center (nSPARC), *Mississippi State University*, **\$150,149**; 10/1/2011-9/30/2012.

PUBLICATIONS

Italicized names are student co-authors.

Book Chapters

- [B3] *Tanmay Bhowmik*, Vander Alves, and **Nan Niu**. “An Exploratory Case Study on Exploiting Aspect Orientation in Mobile Game Porting”, In *Integration of Reusable Systems* (Thouraya Bouabana-Tebibel and Stuart H. Rubin eds.), Advances in Intelligent Systems and Computing, Volume: 263, Springer, 2014, pages 241-261.
- [B2] *Alejandra Yopez Lopez* and **Nan Niu**. “Multiple Criteria Decision Support for Software Reuse: An Industrial Case Study”, In *Information Reuse and Integration in Academia and Industry* (Tansel Özyer, Keivan Kian-Mehr, Mehme Tan, and Jia Zeng eds.), Springer Verlag, 2013, pages 201-220.
- [B1] Yijun Yu, **Nan Niu**, Bruno González-Baixauli, John Mylopoulos, Steve Easterbrook, and Julio Leite. “Requirements Engineering and Aspects”, In *Design Requirements Engineering: A Ten-Year Perspective* (Kalle Lyytinen, Pericles Loucopoulos, John Mylopoulos, and Bill Robinson eds.), Springer-Verlag Berlin Heidelberg, 2009, pages 432-452.

Refereed Journal Papers

- [J18] **Nan Niu**, Juha Savolainen, Mingzhou Jin, and Jing-Ru C. Cheng. “A Systems Approach to Product Line Requirements Reuse”, *IEEE Systems Journal*, (accepted).

- [J17] **Nan Niu**, Li Da Xu, Jing-Ru C. Cheng, and Zhendong Niu. "Analysis of Architecturally Significant Requirements for Enterprise Systems", *IEEE Systems Journal*, (accepted).
- [J16] *Anas Mahmoud* and **Nan Niu**. "On the Role of Semantics in Automated Requirements Tracing", *Requirements Engineering*, (accepted).
- [J15] *Anas Mahmoud* and **Nan Niu**. "Supporting Requirements to Code Traceability through Refactoring", *Requirements Engineering*, (accepted).
- [J14] *Sandeep Reddivari*, *Shirin Rad*, *Tanmay Bhowmik*, Nisreen Cain, and **Nan Niu**. "Visual Requirements Analytics: A Framework and Case Study", *Requirements Engineering*, (accepted).
- [J13] Juha Savolainen, **Nan Niu**, Tommi Mikkonen, and Thomas Fogdal. "Long-Term Product Line Sustainability with Planned Staged Investments", *IEEE Software*, Volume: 30, Issue: 6, November/December, 2013, pages 63-69.
- [J12] **Nan Niu**, Li Da Xu, and Zhuming Bi. "Enterprise Information Systems Architecture – Analysis and Evaluation", *IEEE Transactions on Industrial Informatics*, Volume: 9, Issue: 4, November 2013, pages 2147-2154.
- [J11] **Nan Niu**, *Fangbo Yang*, Jing-Ru C. Cheng, and *Sandeep Reddivari*. "Conflict Resolution Support for Parallel Software Development", *IET Software*, Volume: 7, Issue: 1, February 2013, pages 1-11.
- [J10] *George Valença*, Carina Alves, Vander Alves, and **Nan Niu**. "A Systematic Mapping Study on Business Process Variability", *International Journal of Computer Science & Information Technology*, Volume: 5, Issue: 1, February 2013, pages 1-21.
- [J9] *Shahab Salehghaffari*, **Nan Niu**, and *Sandeep Reddivari*. "An Evidence-Based Software Engineering Evaluation Approach", *International Journal of Advanced Computer Science*, Volume: 3, Issue: 1, January 2013, pages 51-55.
- [J8] *Jianmei Guo*, Yinglin Wang, Zheyang Zhang, Jyrki Nummenmaa, and **Nan Niu**. "Model-Driven Approach to Developing Domain Functional Requirements in Software Product Lines", *IET Software*, Volume: 6, Issue: 4, August 2012, pages 391-401.
- [J7] *Gary Cantrell*, David Dampier, Yogi Dandass, **Nan Niu**, and Chris Bogen. "Research Toward a Partially-Automated, and Crime Specific Digital Triage Process Model", *Computer and Information Science*, Volume: 5, Issue: 2, March 2012, pages 29-38.
- [J6] **Nan Niu**, *Alejandra Yopez Lopez*, and Jing-Ru C. Cheng. "Using Soft Systems Methodology to Improve Requirements Practices: An Exploratory Case Study", *IET Software*, Volume: 5, Issue: 6, December 2011, pages 487-495.
- [J5] **Nan Niu**, Mingzhou Jin, and Jing-Ru C. Cheng. "A Case Study of Exploiting Enterprise Resource Planning Requirements", *Enterprise Information Systems*, Volume: 5, Issue: 2, May 2011, pages 183-206.
- [J4] Vander Alves, **Nan Niu**, Carina Alves, and *George Valença*. "Requirements Engineering for Software Product Lines: A Systematic Literature Review", *Information and Software Technology*, Volume: 52, Issue: 8, August 2010, pages 806-820.
- [J3] **Nan Niu**, Yijun Yu, Bruno González-Baixauli, Neil Ernst, Julio Leite, and John Mylopoulos. "Aspects across Software Life Cycle: A Goal-Driven Approach", *Transactions on Aspect-Oriented Software Development*, Volume: VI, 2009, pages 83-110.
- [J2] **Nan Niu** and Steve Easterbrook. "Analysis of Early Aspects in Requirements Goal Models: A Concept-Driven Approach", *Transactions on Aspect-Oriented Software Development*, Volume: III, 2007, pages 40-72.
- [J1] **Nan Niu** and Steve Easterbrook. "So, You Think You Know Others' Goals? A Repertory Grid Study", *IEEE Software*, Volume: 24, Issue: 2, March/April, 2007, pages 53-61.

Refereed Conference Papers¹

- [C33] *Tanmay Bhowmik, Nan Niu, Anas Mahmoud, and Juha Savolainen. "Automated Support for Combinational Creativity in Requirements Engineering", In Proceedings of 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 2014, (accepted). Acceptance rate: 27% (31 out of 115).*
- [C32] *Nan Niu, Tanmay Bhowmik, Hui Liu, and Zhendong Niu. "Traceability-Enabled Refactoring for Managing Just-In-Time Requirements", In Proceedings of 22nd IEEE International Requirements Engineering Conference (RE 2014), Karlskrona, Sweden, August 2014, (accepted). Acceptance rate: 27% (31 out of 115).*
- [C31] *Zadia Codabux, Byron J. Williams, and Nan Niu. "A Quality Assurance Approach to Technical Debt", In Proceedings of the International Conference on Software Engineering Research and Practice (SERP 2014), Las Vegas, NV, USA, July 2014, (accepted).*
- [C30] *Tanmay Bhowmik, Nan Niu, and Donna Reese. "Students vs. Professional in Assisted Requirements Tracing: How Could We Train Our Students?", In Proceedings of the 121st ASEE Annual Conference & Exposition (ASEE 2014), Indianapolis, IN, USA, June 2014, (accepted).*
- [C29] *Tanmay Bhowmik, Vander Alves, and Nan Niu. "Porting Mobile Games in an Aspect-Oriented Way: An Industrial Case Study", In Proceedings of 14th IEEE International Conference on Information Reuse and Integration (IRI 2013), San Francisco, CA, USA, August 2013, pages 458-465. Acceptance rate: 26%. **Invited to submit a book chapter of "Advances in Intelligent and Soft Computing" (cf. [B3])***
- [C28] *Nan Niu, Sandeep Reddivari, and Zhangji Chen. "Keeping Requirements on Track via Visual Analytics", In Proceedings of 21st IEEE International Requirements Engineering Conference (RE 2013), Rio de Janeiro, Brazil, July 2013, pages 205-214. Acceptance rate: 18% (21 out of 114). **Best Paper Nominee.***
- [C27] *Anas Mahmoud and Nan Niu. "Supporting Requirements Traceability through Refactoring", In Proceedings of 21st IEEE International Requirements Engineering Conference (RE 2013), Rio de Janeiro, Brazil, July 2013, pages 32-41. Acceptance rate: 18% (21 out of 114). **Best Paper Nominee.***
- [C26] *Nan Niu, Anas Mahmoud, Zhangji Chen, and Gary Bradshaw. "Departures from Optimality: Understanding Human Analyst's Information Foraging in Assisted Requirements Tracing", In Proceedings of 35th International Conference on Software Engineering (ICSE 2013), San Francisco, CA, USA, May 2013, pages 572-581. Acceptance rate: 18% (85 out of 461).*
- [C25] *Anas Mahmoud and Nan Niu. "Evaluating Software Clustering Algorithms in the Context of Program Comprehension", In Proceedings of 21st IEEE International Conference on Program Comprehension (ICPC 2013), San Francisco, CA, USA, May 2013, pages 162-171. Acceptance rate: 30% (19 out of 63).*
- [C24] *Nan Niu and Anas Mahmoud. "Enhancing Candidate Link Generation for Requirements Tracing: The Cluster Hypothesis Revisited", In Proceedings of 20th IEEE International Requirements Engineering Conference (RE 2012), Chicago, IL, USA, September 2012, pages 81-90. Acceptance rate: 24% (26 out of 106).*
- [C23] *Sandeep Reddivari, Zhangji Chen, and Nan Niu. "ReCVisu: A Tool for Clustering-Based Visual Exploration of Requirements" (tool demo paper), In Proceedings of 20th IEEE International Requirements Engineering Conference (RE 2012), Chicago, IL, USA, September 2012, pages 327-328.*
- [C22] *Nan Niu, Juha Savolainen, Tanmay Bhowmik, Anas Mahmoud, and Sandeep Reddivari. "A Framework for Examining Topical Locality in Object-Oriented Software", In Proceedings of 36th*

¹ In my professional community, these full-text refereed conference articles have very low acceptance rates, are widely read, and have a professional impact that is comparable to journal articles. The acceptance rate is listed for every article where it could be found.

- IEEE Computer Software and Applications Conference (COMPSAC 2012)*, Izmir, Turkey, July 2012, pages 219-224. Acceptance rate: 30% (72 out of 237).
- [C21] *Anas Mahmoud, Nan Niu, and Songhua Xu. "A Semantic Relatedness Approach for Traceability Link Recovery", In Proceedings of 20th IEEE International Conference on Program Comprehension (ICPC 2012), Passau, Germany, June 2012, pages 183-192. Acceptance rate: 41% (21 out of 51).*
- [C20] *Kendra Carr and Nan Niu. "Women in Software Requirements Engineering: An Exploratory Study", In Proceedings of ASEE Southeastern Section Conference (ASEE-SE 2012), Starkville, MS, USA, April 2012, Article No. 544.*
- [C19] *Alberto Sardinha, Nan Niu, Yijun Yu, and Awais Rashid. "EA-Tracer: Identifying Traceability Links between Code Aspects and Early Aspects", In Proceedings of 27th Annual ACM Symposium on Applied Computing (SAC 2012), Trento, Italy, March 2012, pages 1035-1042.*
- [C18] *Anas Mahmoud and Nan Niu. "TraCter: A Tool for Candidate Traceability Link Clustering" (tool demo paper), In Proceedings of 19th IEEE International Requirements Engineering Conference (RE 2011), Trento, Italy, August-September 2011, pages 335-336.*
- [C17] *Alejandra Yopez Lopez and Nan Niu. "Multiple Criteria Decision Support for Software Reuse: A Case Study", In Proceedings of 12th IEEE International Conference on Information Reuse and Integration (IRI 2011), Las Vegas, NV, USA, August 2011, pages 200-205. Acceptance rate: 29%. Invited to submit a book chapter of "Information Reuse and Integration in Academia and Industry" (cf. [B2]).*
- [C16] *Nan Niu, Donna Reese, Kui Xie, and Chris Smith. "Reuse a 'Software Reuse' Course", In Proceedings of the 118th ASEE Annual Conference & Exposition (ASEE 2011), Vancouver, BC, Canada, June 2011, Article No. AC 2011-322.*
- [C15] *Nan Niu, Anas Mahmoud, and Xiaoyong Yang. "Faceted Navigation for Software Exploration" (short paper), In Proceedings of 19th IEEE International Conference on Program Comprehension (ICPC 2011), Kingston, ON, Canada, June 2011, pages 193-196. Acceptance rate: 25% (19 out of 76).*
- [C14] *Nan Niu, Anas Mahmoud, and Gary Bradshaw. "Information Foraging as a Foundation for Code Navigation (NIER Track)", In Proceedings of 33rd International Conference on Software Engineering (ICSE 2011), Honolulu, HI, USA, May 2011, pages 816-819. Acceptance rate: 23% (46 out of 198).*
- [C13] *Ali Najafi, Nan Niu, and Farzaneh Najafi. "Multi-Level Decomposition Approach for Problem Solving and Design in Software Engineering", In Proceedings of 49th Annual ACM Southeast Conference (ACMSE 2011), Kennesaw, GA, USA, March 2011, pages 249-254.*
- [C12] *Anas Mahmoud and Nan Niu. "An Experimental Investigation of Reusable Requirements Retrieval", In Proceedings of 11th IEEE International Conference on Information Reuse and Integration (IRI 2010), Las Vegas, NV, USA, August 2010, pages 330-335. Acceptance rate: 30% (35 out of 118).*
- [C11] *Nan Niu, Juha Savolainen, and Yijun Yu. "Variability Modeling for Product Line Viewpoints Integration", In Proceedings of 34th Annual IEEE Computer Software and Applications Conference (COMPSAC 2010), Seoul, Korea, July 2010, pages 337-346. Acceptance rate: 20% (39 out of 193).*
- [C10] *Alejandra Yopez Lopez and Nan Niu. "Soft Systems in Requirements Engineering: A Case Study" (short paper), In Proceedings of the 22nd International Conference on Software Engineering and Knowledge Engineering (SEKE 2010), San Francisco, CA, USA, July 2010, pages 38-41. Acceptance rate: 33%.*
- [C9] *Tanmay Bhowmik, Nan Niu, and Edward B. Allen. "Modular Development and Verification of Domain Requirements via Model Checking" (work in progress paper), In Proceedings of 48th ACM Southeast Conference (ACMSE 2010), Oxford, MS, USA, April 2010, Article No. 58.*

- [C8] **Nan Niu** and Steve Easterbrook. "Concept Analysis for Product Line Requirements", In *Proceedings of 8th International Conference on Aspect-Oriented Software Development (AOSD 2009)*, Charlottesville, VA, USA, March 2009, pages 137-148. Acceptance rate: 22% (19 out of 86).
- [C7] **Nan Niu** and Steve Easterbrook. "Extracting and Modeling Product Line Functional Requirements", In *Proceedings of 16th IEEE International Requirements Engineering Conference (RE 2008)*, Barcelona, Spain, September 2008, pages 155-164. Acceptance rate: 11% (18 out of 164).
- [C6] **Nan Niu** and Steve Easterbrook. "On-Demand Cluster Analysis for Product Line Functional Requirements", In *Proceedings of 12th International Software Product Line Conference (SPLC 2008)*, Limerick, Ireland, September 2008, pages 87-96. Acceptance rate: 30% (33 out of 110).
- [C5] **Nan Niu** and Steve Easterbrook. "Exploiting COTS-Based RE Methods: An Experience Report" (short paper), In *Proceedings of 10th International Conference on Software Reuse (ICSR 2008)*, Beijing, China, May 2008, pages 212-216. Acceptance rate: 27% (28 out of 103).
- [C4] Yijun Yu, **Nan Niu**, Bruno González-Baixauli, William Candillon, John Mylopoulos, Steve Easterbrook, Julio Leite, and Gilles Vanwormhoudt. "Tracing and Validating Goal Aspects" (short paper), In *Proceedings of 15th IEEE International Requirements Engineering Conference (RE 2007)*, New Delhi, India, October 2007, pages 53-56. Acceptance rate: 13% (26 out of 200).
- [C3] **Nan Niu** and Steve Easterbrook. "Managing Terminological Interference in Goal Models with Repertory Grid" (short paper), In *Proceedings of 14th IEEE International Requirements Engineering Conference (RE 2006)*, Minneapolis, MN, USA, September 2006, pages 296-299. Acceptance rate: 15% (28 out of 179).
- [C2] **Nan Niu**, Steve Easterbrook, and Mehrdad Sabetzadeh. "A Category-Theoretic Approach to Syntactic Software Merging", In *Proceedings of 21st IEEE International Conference on Software Maintenance (ICSM 2005)*, Budapest, Hungary, September 2005, pages 197-206. Acceptance rate: 30% (55 out of 180).
- [C1] Jörg Sander, Xuejie Qin, Zhiyong Lu, **Nan Niu**, and Alex Kovarsky. "Automatic Extraction of Clusters from Hierarchical Clustering Representations", In *Proceedings of 7th Pacific-Area Conference on Knowledge Discovery and Data Mining (PAKDD 2003)*, Seoul, Korea, May 2003, pages 75-87. Acceptance rate: 18% (38 out of 215).

Refereed Workshop Papers and Conference Abstracts

- [W11] **Nan Niu**. "Is Open-Source Repository Too Open for Human-Subject Study of Software Engineering Methods?", *3rd Workshop on Experimental Evaluation of Software and Systems in Computer Science (EVALUATE 2012)*, Beijing, China, June 2012.
- [W10] **Nan Niu**, Sandeep Reddivari, Anas Mahmoud, Tanmay Bhowmik, and Songhua Xu. "Automatic Labeling of Software Requirements Clusters", *4th International Workshop on Search-Driven Development: Users, Infrastructure, Tools and Evaluation (SUITE 2012)*, Zurich, Switzerland, June 2012, pages 17-20.
- [W9] **Nan Niu**, Fangbo Yang, Jing-Ru C. Cheng, and Sandeep Reddivari. "A Cost-Benefit Approach to Recommending Conflict Resolution for Parallel Software Development", *3rd International Workshop on Recommendation Systems for Software Engineering (RSSE 2012)*, Zurich, Switzerland, June, 2012, pages 21-25. Acceptance rate: 18% (6 out of 34).
- [W8] Anas Mahmoud and **Nan Niu**. "Source Code Indexing for Automated Tracing", In *Proceedings of 6th International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE 2011)*, Honolulu, Hawaii, USA, May 2011, pages 3-9. Acceptance rate: 25% (4 out of 17).
- [W7] **Nan Niu**, Vander Alves, and Tanmay Bhowmik. "Portability as an Aspect: Rethinking Modularity in Mobile Game Development" (extended abstract), In *Proceedings of 10th International*

Conference on Aspect-Oriented Software Development (AOSD 2011), Pernambuco, Brazil, March 2011, pages 3-4.

- [W6] **Anas Mahmoud** and **Nan Niu**. "Using Semantics-Enabled Information Retrieval in Requirements Tracing: An Ongoing Experimental Investigation" (fast abstract), In *Proceedings of 34th Annual IEEE Computer Software and Applications Conference (COMPSAC 2010)*, Seoul, Korea, July 2010, pages 246-247.
- [W5] **Nan Niu**, Steve Easterbrook, and Yijun Yu. "A Taxonomy of Asymmetric Requirements Aspects", In *Proceedings of Workshop on Early Aspects (EA 2007)*, Vancouver, BC, Canada, March 2007, pages 1-18.
- [W4] **Nan Niu** and Steve Easterbrook. "Discovering Aspects in Requirements with Repertory Grid", In *Proceedings of Workshop on Early Aspects (EA 2006)*, Shanghai, China, May 2006, pages 35-41.
- [W3] Greg Brunet, Marsha Chechik, Steve Easterbrook, Shiva Nejati, **Nan Niu**, and Mehrdad Sabetzadeh. "A Manifesto for Model Merging", In *Proceedings of Workshop on Global Integrated Model Management (GaMMa 2006)*, Shanghai, China, May 2006, pages 5-11.
- [W2] **Nan Niu** and Steve Easterbrook. "On the Use of Model Checking in Verification of Evolving Agile Software Frameworks: An Exploratory Case Study", In *Proceedings of International Workshop on Modeling, Simulation, Verification and Validation of Enterprise Information Systems (MSVVEIS 2005)*, Miami, FL, USA, May 2005, pages 115-117.
- [W1] **Nan Niu**, Eleni Stroulia, and Muhammad El-Ramly. "Understanding Web Usage for Effective Dynamic Web-Site Adaptation", In *Proceedings of 4th International Workshop on Web Site Evolution (WSE 2002)*, Montréal, PQ, Canada, October 2002, pages 53-62. **Best Paper Award**.

Non-Refereed Papers and Theses

- [T3] **Nan Niu**. "Extractive Product Line Requirements Engineering", *Ph.D. Thesis*, Department of Computer Science, University of Toronto, Canada, August 2009.
- [T2] **Nan Niu**. "Extracting Product-Line Requirements Specification", *Doctoral Track of 15th IEEE International Requirements Engineering Conference (RE 2007)*, New Delhi, India, October 2007.
- [T1] **Nan Niu**. "Formally Understanding the Behavior of a Framework's Transaction Management", *Master's Thesis*, Department of Computing Science, University of Alberta, Canada, November 2003.

TECHNICAL PRESENTATIONS

Invited Talks

1. **Nan Niu**. "Fostering Creativity in Software Requirements Engineering", NSF Center of Autonomic Computing (CAC), *Mississippi State University*, MS, USA, February 23, 2012. Host: Ioana Banicescu.
2. **Nan Niu**. "Information Foraging as a Foundation for Code Navigation", Department of Computer Science, *University of Alabama*, Tuscaloosa, AL, USA, October 5, 2011. Host: Jeff Gray.
3. **Nan Niu**. "Extractive Product Line Requirements Engineering", Center for Advanced Vehicular Systems (CAVS), *Mississippi State University*, MS, USA, November 11, 2009. Host: Roger King.
4. **Nan Niu**. "Extractive Product Line Requirements Engineering", Department of Computer and Information Sciences, *University of Alabama at Birmingham*, Birmingham, AL, USA, November 6, 2009. Host: Chengcui Zhang.
5. **Nan Niu**. "Extractive Product Line Requirements Engineering", Department of Computer Science, *Virginia Tech*, Falls Church, VA, USA, October 30, 2009. Host: Bill Frakes.

TEACHING

University Courses Taught at the University of Cincinnati

year/term	course number	course title	semester credits	number students
2014/fall	CS 6027	Requirements Engineering	3	TBD

*number of undergraduate students / number of graduate students

University Courses Taught at Mississippi State University²

year/term	course number	course title	semester credits	number students
2014/spring	CSE 4283/6283	Software Testing and Quality Assurance	3	27/2*
2013/fall	CSE 4214/6214	Introduction to Software Engineering	4	21/4*
2013/fall	CSE 8273	Software Requirements Engineering	3	19
2013/spring	CSE 4283/6283	Software Testing and Quality Assurance	3	20/6*
2012/fall	CSE 4214/6214	Introduction to Software Engineering	4	14/2
2012/fall	CSE 8990	Software Reuse and Domain Engineering	3	10
2012/spring	CSE 3223	Software Engineering Senior Design Project II	3	11
2012/spring	CSE 4283/6283	Software Testing and Quality Assurance	3	12/6*
2011/fall	CSE 3213	Software Engineering Senior Design Project I	3	6
2011/fall	CSE 6214	Introduction to Software Engineering	4	3
2011/fall	CSE 8273	Software Requirements Engineering	3	9
2011/spring	CSE 4283/6283	Software Testing and Quality Assurance	3	11/7*
2011/spring	CSE 6214	Introduction to Software Engineering	4	3
2010/fall	CSE 4214/6214	Introduction to Software Engineering	4	6/5*
2010/spring	CSE 8990	Software Reuse and Domain Engineering	3	10
2009/fall	CSE 8273	Software Requirements Engineering	3	8

*number of undergraduate students / number of graduate students

University Courses Coordinated at Mississippi State University

Responsible for maintaining ABET (Accreditation Board for Engineering and Technology) materials for the following courses:

- CSE 4283 Software Testing and Quality Assurance (3 credits)
- CSE 4214 Introduction to Software Engineering (4 credits)

University Courses Taught at the University of Toronto

year/term	course number	course title	term credits	number students
2008/fall	CSC 309	Programming on the Web	3	8
2008/summer	CSC 309	Programming on the Web	3	27

STUDENT ADVISING AND THESIS COMMITTEE SERVICE

Graduated Ph.D. Students (Advisor):

- *Sandeep Reddivari*, Computer Science and Engineering, Mississippi State University, "Visual Analytics for Software Requirements Engineering", passed defense on March 20, 2014.

² My overall student teaching evaluation score from Fall 2009 to Spring 2014 semesters is 4.65 (average) on a 5-point scale, whereas the average evaluation scores of the Department of Computer Science and Engineering, College of Engineering, and Mississippi State University during that period are 4.2, 4.1, and 4.2 respectively.

- *Anas Mohammad Mahmoud*, Computer Science and Engineering, Mississippi State University, "Toward an Effective Automated Tracing Process", passed defense on March 17, 2014.

Graduated M.Sc. Students (Advisor):

- *Shirin Rad*, Computer Science and Engineering, Mississippi State University, "Enhancing Requirements-Level Defect Detection and Prevention with Visual Analytics", M.Sc. Thesis, passed defense on March 18, 2014.
- *Zhangji Chen*, Computer Science and Engineering, Mississippi State University, "ReCVisu+: A Visual Analytics Tool for the Exploration of Requirements", M.Sc. Project, passed defense on March 17, 2014.
- *Brandon Rice*, Computer Science and Engineering, Mississippi State University, "Development of Mississippi Irrigation Scheduling Tool", M.Sc. Project, passed defense on March 20, 2013.
- *Fangbo Yang*, Computer Science and Engineering, Mississippi State University, "Flexible Semantic Merging of Multiple Versions and Variants of Software", M.Sc. Project, passed defense on October 19, 2012.

Current Ph.D. Students (Advisor):

- *Tanmay Bhowmik*, Computer Science and Engineering, Mississippi State University, "Social Information Foraging in Software Maintenance", expected 2015.

SERVICE ACTIVITIES

Affiliations

- IEEE (Member'09 – Senior Member'13), IEEE Computer Society, 2009-Present.
- IEEE SMC (Systems, Man, and Cybernetics Society) Technical Committee on Enterprise Information Systems (TCEIS), 2010-Present.
- American Society for Engineering Education, 2010-Present.

Review Panels

- *National Science Foundation* (NSF) review panel, Washington DC, April 2014, April 2012.

Organizing Committees

- Tutorials co-chair (with Erik Bjernulf), *22nd IEEE International Requirements Engineering Conference (RE 2014)*, Karlskrona, Sweden, August 2014.
- General chair, *7th International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE 2013)*, San Francisco, CA, USA, May 2013.
- Workshops co-chair (with Ana Moreira), *20th IEEE International Requirements Engineering Conference (RE 2012)*, Chicago, IL, USA, September 2012.
- Publicity co-chair (with Norbert Seyff), *19th IEEE International Requirements Engineering Conference (RE 2011)*, Trento, Italy, August-September 2011.
- Publicity co-chair (with Chengcui Zhang), *12th IEEE International Conference on Information Reuse and Integration (IRI 2011)*, Las Vegas, NV, USA, August 2011.
- Posters and demos co-chair (with Lin Liu), *18th IEEE International Requirements Engineering Conference (RE 2010)*, Sydney, Australia, September 2010.
- Program and organizing co-chair (with Alessandro Garcia), *International Workshop on Early Aspects (EA 2009)*, Charlottesville, VA, USA, March 2009.

Program Committees

1. *37th ACM/IEEE International Conference on Software Engineering (ICSE 2015)*, New Ideas and Emerging Results (NIER) Program Committee, Firenze, Italy, May 2015.
2. *22nd ACM SIGSOFT International Symposium on Foundations of Software Engineering (FSE 2014)*, ACM Student Research Competition (SRC) Selection Committee, Hong Kong, China, November 2014.
3. *30th IEEE International Conference on Software Maintenance and Evolution (ICSME 2014)*, Early Research Achievements Track Program Committee, Victoria, Canada, September 2014.
4. *22nd IEEE International Requirements Engineering Conference (RE 2014)*, Workshop Selection Committee, Karlskrona, Sweden, August 2014.
5. *4th International Workshop on Model-Driven Requirements Engineering (MoDRE 2014)*, Karlskrona, Sweden, August 2014.
6. *36th ACM/IEEE International Conference on Software Engineering (ICSE 2014)*, New Ideas and Emerging Results (NIER) Program Committee, Hyderabad, India, June 2014.
7. *22nd IEEE International Conference on Program Comprehension (ICPC 2014)*, Early Research Achievement Track Program Committee, Hyderabad, India, June 2014.
8. *8th IEEE International Conference on Research Challenges in Information Science (RCIS 2014)*, Marrakesh, Morocco, May 2014.
9. *29th Annual ACM Symposium on Applied Computing (SAC 2014)*, Requirements Engineering (RE) Track, Gyeongju, Korea, March 2014.
10. *8th International Workshop on Software Quality and Maintainability (SQM 2014)*, Antwerp, Belgium, February 2014.
11. *4th World Congress on Software Engineering (WCSE 2013)*, Hong Kong, China, December 2013.
12. *4th Global Congress on Intelligent Systems (GCIS 2013)*, Hong Kong, China, December 2013.
13. *1st International Conference on Enterprise Systems (ES 2013)*, Cape Town, South Africa, November 2013.
14. *7th IEEE International Workshop on Requirements Engineering for Services (REFS 2013)*, Kyoto, Japan, July 2013.
15. *21st IEEE International Requirements Engineering Conference (RE 2013)*, Rio de Janeiro, Brazil, July 2013.
16. *21st IEEE International Requirements Engineering Conference (RE 2013)*, Workshop Selection Committee, Rio de Janeiro, Brazil, July 2013.
17. *3rd International Workshop on Model-Driven Requirements Engineering (MoDRE 2013)*, Rio de Janeiro, Brazil, September 2013.
18. *120th American Society for Engineering Education Annual Conference & Exposition (ASEE 2013)*, Software Engineering Constituent Committee (SwECC) Track, Atlanta, GA, USA, June 2013.
19. *35th ACM/IEEE International Conference on Software Engineering (ICSE 2013)*, ACM Student Research Competition (SRC) Selection Committee, San Francisco, CA, USA, May 2013.
20. *7th IEEE International Conference on Research Challenges in Information Science (RCIS 2013)*, Paris, France, May 2013.
21. *International Conference on Information Communication Technology (ICT-EurAsia 2013)*, Yogyakarta, Indonesia, March 2013.
22. *7th International Workshop on Software Quality and Maintainability (SQM 2013)*, Genova, Italy, March 2013.

23. *International Conference on Data and Knowledge Engineering (ICDKE 2012)*, Wuyishan, China, November 2012.
24. *3rd World Congress on Software Engineering (WCSE 2012)*, Wuhan, China, November 2012.
25. *International Conference on Knowledge Engineering and Ontology Development (KEOD 2012)*, Barcelona, Spain, October 2012.
26. *2nd International Workshop on Model-Driven Requirements Engineering (MoDRE 2012)*, Chicago, IL, USA, September 2012.
27. *3rd International Workshop on Knowledge-Oriented Product Line Engineering (KOPLE 2012)*, Salvador, Brazil, September 2012.
28. *6th IEEE International Workshop on Requirements Engineering for Services (REFS 2012)*, Izmir, Turkey, July 2012.
29. *119th American Society for Engineering Education Annual Conference & Exposition (ASEE 2012)*, Software Engineering Constituent Committee (SwECC) Track, San Antonio, TX, USA, June 2012.
30. *6th International Conference on Research Challenges in Information Science (RCIS 2012)*, Valencia, Spain, May 2012.
31. *American Society for Engineering Education Southeastern Section Conference (ASEE-SE 2012)*, Software Engineering Track, Starkville, MS, USA, April 2012.
32. *50th ACM Southeast Conference (ACMSE 2012)*, Tuscaloosa, AL, USA, March 2012.
33. *13th IEEE International High Assurance Systems Engineering (HASE 2011)*, Boca Raton, FL, USA, November 2011.
34. *International Conference on Knowledge Engineering and Ontology Development (KEOD 2011)*, Paris, France, October 2011.
35. *International Conference on Data and Knowledge Engineering (ICDKE 2011)*, Milan, Italy, September 2011.
36. *1st International Workshop on Model-Driven Requirements Engineering (MoDRE 2011)*, Trento, Italy, August 2011.
37. *2nd International Workshop on Knowledge-Oriented Product Line Engineering (KOPLE 2011)*, Munich, Germany, August 2011.
38. *5th IEEE International Workshop on Requirements Engineering for Services (REFS 2011)*, Munich, Germany, July 2011.
39. *118th American Society for Engineering Education Annual Conference & Exposition (ASEE 2011)*, Software Engineering Constituent Committee (SwECC) Track, Vancouver, BC, Canada, June 2011.
40. *4th International Workshop on Software Ecosystems (IWSECO 2011)*, Brussels, Belgium, June 2011.
41. *5th International Conference on Research Challenges in Information Science (RCIS 2011)*, Guadeloupe, France, May 2011.
42. *2nd World Congress on Software Engineering (WCSE 2010)*, Wuhan, China, December 2010.
43. *1st International Workshop on Knowledge-Oriented Product Line Engineering (KOPLE 2010)*, Reno, NV, USA, October 2010.
44. *International Conference on Knowledge Engineering and Ontology Development (KEOD 2010)*, Valencia, Spain, October 2010.
45. *3rd International Workshop on Software Ecosystems (IWSECO 2010)*, Bangkok, Thailand, October 2010.

46. *7th International Conference on the Quality of Information and Communications Technology (QUATIC 2010)*, Quality in Requirements Engineering Track, Oporto, Portugal, September-October 2010.
47. *International Conference on Data and Knowledge Engineering (ICDKE 2010)*, Melbourne, Australia, September 2010.
48. *4th IEEE International Workshop on Requirements Engineering for Services (REFS 2010)*, Seoul, Korea, July 2010.
49. *International Workshop on Empirical Evaluation of Software Composition Techniques (ESCOT 2010)*, Rennes and Saint-Malo, France, March 2010.
50. *International Workshop on Early Aspects (EA 2008)*, Brussels, Belgium, March 2008.

Other Professional Services

- **Editorial Advisory Board Member**, “Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills” (editor: Liguu Yu), IGI Global, scheduled for release in 2014 (<http://www.igi-global.com/publish/call-for-papers/call-details/929>).
- **Session Chair**, RE Mini Tutorial: Winning the Hidden Battle: Requirements Tool Selection and Adoption, *21st IEEE International Requirements Engineering Conference (RE 2013)*, Rio de Janeiro, Brazil, July 18, 2013.
- **Mississippi Region V Science and Engineering Fair Judge**, Bagley College of Engineering, *Mississippi State University*, February 2014, February 2013, February 2012, March 2011, March 2010.
- **Panelist** (together with Neil Maiden and Joerg Doerr) on “Confronting the challenges in empirical research in RE: What solutions worked well, what did not?”, *International Workshop on Empirical Requirements Engineering (EmpiRE 2012)*, Chicago, IL, USA, September 25, 2012.
- **Session Chair**, E3: Software Development II and F2: Systems II, *48th ACM Southeast Conference (ACMSE 2010)*, Oxford, MS, USA, April 2010.
- **Student Volunteer**, *15th IEEE International Requirements Engineering Conference (RE 2007)*, New Delhi, India, October 2007.
- **Student Volunteer**, *14th IEEE International Requirements Engineering Conference (RE 2006)*, Minneapolis, MN, USA, September 2006.
- **Student Volunteer**, *28th International Conference on Software Engineering (ICSE 2006)*, Shanghai, China, May 2006.
- **Student Volunteer**, *18th Annual IEEE Symposium on Logic in Computer Science (LICS 2003)*, Ottawa, Canada, June 2003.
- **Student Volunteer**, *8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD 2002)*, Edmonton, AB, Canada, July 2002.

Professional Reviewing

1. Reviewer for ACM Transactions on Software Engineering and Methodology (ACM), 2013, 2011.
2. Reviewer for IEEE Transactions on Software Engineering (IEEE), 2014, 2013, 2012.
3. Reviewer for IEEE Transactions on Industrial Informatics (IEEE), 2012, 2011.
4. Reviewer for IET Software (The Institution of Engineering and Technology), 2013, 2012, 2011, 2010.
5. Reviewer for Requirements Engineering Journal (Springer), 2013, 2012, 2011, 2010, 2009, 2008.
6. Reviewer for Empirical Software Engineering Journal (Springer), 2013, 2011.

7. Reviewer for Software Quality Journal (Springer), 2013, 2012, 2011, 2010.
8. Reviewer for Software and System Modeling Journal (Springer), 2012, 2011.
9. Reviewer for Information Systems Frontiers (Springer), 2013, 2012.
10. Reviewer for International Journal of Systems Assurance Engineering and Management (Springer), 2010.
11. Reviewer for Journal of Systems and Software (Elsevier), 2011, 2010.
12. Reviewer for Information & Management (Elsevier), 2013.
13. Reviewer for Software: Practice and Experience (Wiley), 2013
14. Reviewer for Enterprise Information Systems (Taylor & Francis), 2012, 2010.
15. Reviewer for International Journal of Technology Management (Inderscience Publishers), 2012.
16. Reviewer for International Journal of Cognitive Performance Support (Inderscience Publishers), 2012.

University Service Activities

- **Strategic planning committee member**, Department of Computer Science and Engineering, *Mississippi State University*, 2012-2013.
- **Graduate studies committee member**, Department of Computer Science and Engineering, *Mississippi State University*, 2009-2013.
- **Software engineering undergraduate studies committee member**, Department of Computer Science and Engineering, *Mississippi State University*, 2010-2012.
- **Ph.D. qualifying committee member** (ad-hoc), Department of Computer Science and Engineering, *Mississippi State University*, 2010-2013.
- **Research skills committee member**, Department of Computer Science, *University of Toronto*, 2007-2008.
- **Graduate admissions committee member**, Department of Computer Science, *University of Toronto*, 2004-2005.

REFERENCES

References are available upon request.