
CURRICULUM VITAE

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RESEARCH INTERESTS

Embedded System, VLSI CAD, Design Verification, Computer Architecture

EDUCATION

- 2006 - **Ph.D.** in Computer Science, Computer and Information Science and Engineering, University of Florida. Advisor: Prof. [Prabhat Mishra](#).
- 2003 - 2006 **M.Eng.** in Computer Applications Technology, Department of Computer Science and Technology, Nanjing University. Advisor: Prof. [Xuandong Li](#).
- 1999 - 2003 **B.S.** in Computer Science and Technology, Department of Computer Science and Technology, Nanjing University

EMPLOYMENT

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|-------------|---------------------------|---|
| 2007 - | <i>Research Assistant</i> | University of Florida , Gainesville, USA |
| 2006 - 2007 | <i>Teaching Assistant</i> | University of Florida , Gainesville, USA |
| Winter 2005 | <i>Intern (R&D)</i> | China Mobile , Shenzheng, China |
| Summer 2005 | <i>Intern (R&D)</i> | Trend Micro , Nanjing, China |
| 2002 - 2006 | <i>Research Assistant</i> | Nanjing University , Nanjing, China |

HONORS & CERTIFICATES

- 2008 DAC Young Student Support Program Award
- 2005 Outstanding Graduate Student scholarship, Nanjing University
- 2004 SEFM 2004 Tutorial in Beijing
- 2004 IBM Advanced Technology of XML Training Program (T141) Certificate
- 2002 People's Scholarship, Nanjing University
- 2001 People's Scholarship, Nanjing University
- 2000 People's Scholarship, Nanjing University

PROFESSIONAL ACTIVITIES

Reviewer of Premier Conferences

- [1] International Conference on Hardware/Software Codesign and System Synthesis ([CODES+ISSS](#)), 2007, 2008.
- [2] International Conference on VLSI Design ([VLSI Design](#)), 2007, 2008.

PROFESSIONAL SKILLS

Operating System: Linux, Windows

Programming Language: C, C++, Java, Verilog, JSP, Python, Assembly Language, UML, Matlab

RESEARCH EXPERIENCE

Projects

- Jan. 2007 - Present *Use of SystemC Transaction Level Modeling as a Golden Reference Model for Design and Validation of SoCs* (supported by Intel). My research focuses on designing methodology, algorithm and tools to verify the system level design of embedded systems.
- Sept. 2004 - July.2006 *Automatic Test Case Generation for Activity Diagrams*. My research focused on the design of a prototype tool AGTCG to automatically generate test cases for the concurrent behavior of UML activity diagrams.
- Sept.2003 - July.2006 *Modeling Checking of real-time System*. (supported by National Nature Science Fund and the National Grand Fundamental Research 973 Program). My research focused on the analysis of the reachability of timed automata.
- Sept.2002 - July.2003 *Semantic Analysis and Inconsistency Checking of UML Models* (supported by National Nature Science Fund, 6027036). My research in this project included designing tools to check and analyze the time consistency of UML sequence diagrams.

Research Tools Developed

- July.2004 – Jun.2006 Develop a tool *AGTCG* which can select automatically generated test cases based on Activity Diagram.
- July.2003 – Jun.2006 Develop a model checking tool which reduces the state space during the reachability checking of timed automata.
- Mar.2003 – Jun.2003 Develop a GUI frame which is used to check the consistency between the sequence diagram and the state diagram.

SELECTED PUBLICATIONS

Journal Articles

- [1] Mingsong Chen, Prabhat Mishra and Dhruvajyoti Kalita. **Efficient Automatic Test Generation for Validation of UML Activity Diagram**. Under review.
- [2] Mingsong Chen, Xiaokang Qiu, Wei Xu, Linzhang Wang, Jianhua Zhao, Xuandong Li. **UML Activity Diagram Based Automatic Test Case Generation for Java Programs**. In *The Computer Journal*, Oxford Press, 2007.
- [3] Xiaokang Qiu, Mingsong Chen, Linzhang Wang, Xuandong Li, Guoliang Zheng. **UML Behavior Diagram Driven Tool for Runtime Verification of Java Programs**. In *Computer Science(in Chinese)*. Vol 12, 2007.
- [4] Mingsong Chen, Jianhua Zhao, Xuandong Li, Guoliang Zheng. **An Algorithm to Dynamically Reduce the State Space of Timed Automata during the Reachability Analysis**. In *Computer Science(in Chinese)*. Vol 1, 2007.
- [5] Mingsong Chen, Jianhua Zhao, Xuandong Li, Guoliang Zheng. **A study of Optimization Techniques about reachability in Timed Automata**. In *Computer Science(in Chinese)*. Vol 6, 2006.

Conference and Workshop Papers

- [1] Prabhat Mishra and Mingsong Chen. **Efficient Techniques for Directed Test Generation using Incremental Satisfiability**. Accepted by 22nd *International Conference on VLSI Design (VLSI 2009)*, New Delhi, India, Jan. 5-9, 2009.
- [2] Mingsong Chen, Prabhat Mishra and Dhrubajyoti Kalita. **Coverage-driven Automatic Test Generation for UML Activity Diagrams**. *ACM Great Lakes Symposium on VLSI (GLSVLSI)*. Orlando, USA, May 4 - 6, 2008.
- [3] Mingsong Chen, Prabhat Mishra and Dhrubajyoti Kalita. **Towards RTL Test Generation from SystemC TLM Specifications**. *IEEE International High Level Design Validation and Test Workshop (HLDVT)*. pages - , Irvine, California, November 7-9, 2007
- [4] Jeeyoung Kim, Yi Du, Mingsong Chen, Ahmed Helmy. **Comparing Mobility and Predictability of VoIP and WLAN Traces**. *CRAWDAD Workshop 2007 (Co-located with MobiCom)*. Montréal, Canada, September, 2007
- [5] Mingsong Chen, Xiaokang Qiu, Xuandong Li. **Automatic Test Case Generation for UML Activity Diagrams**. *First International Workshop on Automation on Software Test (AST)*. pages 2-8, Shanghai, May, 2006

Thesis

- [1] "Dynamic Optimization Techniques for State Space in Timed Automata during Reachability Analysis". Thesis for the Degree of Master in Nanjing University, China. Advisor: Prof. Xuandong Li and Prof. Jianhua Zhao
- [2] "Checking the time consistence of Message Sequence Chart". Thesis for the Degree of Bachelor in Nanjing University, China. Advisor: Prof. Xuandong Li

COURSE PROJECTS

- [1] Programming Language Principle with Dr. Manuel Bermudez, Summer 2007.
 - Final Project: **The Compiler of RPAL – A Functional Language**.
 - My job is to develop a compiler for the functional language RPAL. The tool can parse the RPAL language. And I implement the operational semantics for RPAL.
- [2] Embedded Systems with Dr. Prabhat Mishra, Spring 2007.
 - Final Project: **Two Level Bitmask-Based Code Compression for Embedded Systems**.
 - I proposed and implemented an improved method for Bitmask-Based code compression. The compression ratio performance can be increased by 20%.
- [3] Wireless Mobile Networks Design and Analysis with Dr. Ahmed Helmy, Spring 2007.
 - Final Project: **Comparing Mobility and Predictability of VoIP and WLAN Traces**.
 - This is a team project. My job is to implement two kind of predictors: LZ predictor and Markov predictor.

[4] Computer Architecture Principles with Dr. Jih-Kwon Peir, Spring 2007.

-Final Project: **A simulator for Tomasulo Algorithm.**

-I implemented a tool to simulate the Tomasulo algorithm. The tool can read the MIPS instructions and execute the instruction in a pipeline way.

[5] Mobile Computing with Dr. Sumi Helal, Fall 2006.

-Final Project: **A simulator for Atlas Platform.**

-I designed a GUI framework for the Atlas platform. The platform can receive and analysis the data of the sensor nodes through the middleware OSGi. Also I design the simulator of the sensor nodes, which run like virtual nodes instead of real nodes. The simulator can be used as a research environment.

[6] Advanced Data Structures with Dr. Sartaj Sahni, Fall 2006.

-Final Project: **The implementation of Fibonacci Heap and Binomial Heap.**

-I implemented the Fibonacci heap and Binomial heap and compared the performance of both data structures.

OTHER ACTIVITIES

Sep. 2003 - Jun.2006 Serve in the Sports Department in the Graduates' Union of the Department of Computer Science and Technology, Nanjing University

Sep. 2003 - Jun.2006 Network Administrator of Software Engineering Group of the Department of Computer Science and Technology, Nanjing University