

Xiaoqing Jin

CONTACT INFORMATION

Toyota Motor Engineering & Manufacturing North America, Inc.
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EDUCATION

University of California, Riverside, CA, USA

Ph.D. Computer Science, Aug. 2013

Wuhan University, Wuhan, China

M. Sc. Computer Applications, Jul. 2007

Wuhan University, Wuhan, China

B. Eng. Computer Science and Technology, Jul. 2005

ACADEMIC EXPERIENCE

Logic and Stochastic Verification Lab, University of California, Riverside

Research Assistant

Jun. 2009 to Aug. 2013

- Working on a symbolic framework of verification and test generation for a network of communicating finite state machines (NCFSMs) using the multi-valued decision diagrams (MDDs) library in SMART.
- Developed new CTL model checking algorithms and shortest witness generation using the saturation algorithm.
- Developing the new version of terminal-valued and edge-valued decision diagrams library.
- Working on the validation and verification of hybrid systems.

Machine learning project, University of California, Riverside

Course Project

Mar. 2009 to Jun. 2009

- Applied regression methods, such as ridge regression, radial basis function network (RBFN), and neural networks to construct the thermal model for the notebook skin temperature from a time series data set for Intel.

Mixed-Signal Nanometer VLSI Research Lab, University of California, Riverside

Research Assistant

Sep. 2008 to Mar. 2009

- Used the finite element method (FEM) to construct a 3-dimensional thermal model for steady and transient thermal analysis.

Institute of Microelectronics and Information Technology, Wuhan University

Research Assistant

May 2004 to Aug. 2008

- Worked on fast integrated circuit (IC) parasitic extraction, layout recognition algorithms, placement algorithms, mesh algorithms.

EMPLOYMENT

Toyota Technical Center, Gardena, CA

Senior Research Engineer

Aug. 2013 to current

Research Engineer Internship

Jun. 2012 to Sept. 2012

- Evaluate commercial verification and validation tools from Mathworks, QTronic, and Reactive Systems.
- Research on a requirement mining framework for a closed-loop Simulink model.

Research Engineer Internship

Jan. 2012 to Apr. 2012

- Develop a tool to do dependency analysis for C engine code base.
- Research on temporal logic falsification on an Simulink engine closed-loop model.

Google Inc., Santa Monica, CA

Software Engineer Internship

Jun. 2010 to Sept. 2010

- Developed a tool for analyzing and visualizing the result of taxonomical classification, binary classification, and clustering.

PATENTS FILED

US Patent Application Number 13/651,961: **Systems and Methods for Mining Temporal Requirements from Block Diagram Models of Control Systems.**

SELECTED
PUBLICATIONS

Xiaoqing Jin, Yousra Lembachar, and Gianfranco Ciardo, *Symbolic termination and confluence checking for ECA rules* Transactions on Petri Nets and Other Models of Concurrency, V9, 2014

Xiaoqing Jin, Jyotirmoy V Deshmukh, James Kapinski, Koichi Ueda, Ken Butts, *Benchmarks for Model Transformations and Conformance Checking*, Proceeding Applied Verification for Continuous and Hybrid Systems (ARCH), 2014

Xiaoqing Jin, Jyotirmoy V Deshmukh, James Kapinski, Koichi Ueda, Ken Butts, *Challenges of Applying Formal Methods to Automotive Control Systems*, Invited Paper at NSF National Workshop on Transportation Cyber-Physical Systems, 2014

Xiaoqing Jin, Jyotirmoy V Deshmukh, James Kapinski, Koichi Ueda, Ken Butts, *Powertrain control verification benchmark*, Proceedings Hybrid Systems: Computation and Control (HSCC), 2014

Xiaoqing Jin, Yousra Lembachar, and Gianfranco Ciardo, *Symbolic verification of ECA rules*, international workshop on Petri Nets and Software Engineering (PNSE), pp.35-53, 2013

Xiaoqing Jin, Alexandre Donzé, and Gianfranco Ciardo, *Mining weighted requirements from closed-loop control models*, Proceeding 6th Numerical Software Verification (NSV), 2013.

Xiaoqing Jin, Alexandre Donzé, Jyotirmoy V. Deshmukh, Sanjit A. Seshia, *Mining Requirements from Closed-loop Control Models*, Proceedings Hybrid Systems: Computation and Control (HSCC), 2013

Gianfranco Ciardo, Yang Zhao, Xiaoqing Jin, *Ten years of saturation: a petri net perspective*, Transactions on Petri Nets and Other Models of Concurrency, pp.51-95, 2012

Xiaoqing Jin, Gianfranco Ciardo, and Tae-Hyong Kim, Yang Zhao, *Symbolic Verification and Test Generation for a Network of FSMs*, Proceeding 9th Automated Technology for Verification and Analysis (ATVA), pp.432-442, 2011

Yang Zhao, Xiaoqing Jin, and Gianfranco Ciardo, *A symbolic algorithm for shortest EG witness generation*, Proceedings 5th IEEE International Conference on Theoretical Aspects of Software Engineering (TASE), pp. 68-75, 2011

Gianfranco Ciardo, Yang Zhao, and Xiaoqing Jin, *Parallel symbolic state-space exploration is difficult, but what is the alternative?*, Proceedings 8th International Workshop on Parallel and Distributed Methods in verifiCation (PDMC), pp. 1-17, 2009.

Xiaodi Huang, Gaofeng Wang, and Xiaoqing Jin, *An efficient method for transmission line simulation*, Proceedings 4th International Symposium on ElectroMagnetic Compatibility (EMC), pp.122-125, 2007

PROFESSIONAL
ACTIVITIES

External Reviewer:

- Quantitative Evaluation of Systems (QEST) 2009, 2012, 2013
- Applications and Theory of Petri Nets (ATPN) 2010, 2012, 2013
- Application of Concurrency to System Design (ACSD) 2011
- Petri Nets (PN) 2011, 2012, 2013
- Transaction on Petri Nets and Other Models of Concurrency (ToPNoC) 2011
- Numerical Software Verification (NSV) 2014
- Design Automation Conference (DAC) 2014

Member of Association for Computing Machinery (ACM).

Member of IEEE.