

# Curriculum Vitae

Bow-Yaw Wang

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## Degrees

Ph.D. in Computer Science, University of Pennsylvania, 1995-2001.

Dissertation: Hierarchical Reduction and Refinement Checking for Asynchronous Processes

Advisor: Dr. Rajeev Alur

M.S. in Electrical Engineering, National Taiwan University, 1992-94

B.S. in Mathematics, National Taiwan University, 1988-92

## Research

model checking, formal verification, logic in computer science.

## System development

OMOCHA: an extensible model checker for reactive systems

## Experience

Assistant Research Fellow at Academia Sinica, since spring 2003.

Adjoint Assistant Professor at National Taiwan University, since 2004.

Senior Software Engineer at Verplex Systems, 2001-2003.

Summer internship at Intel Corp (with Dr. Ching-Tsun Chou), 1999.

Summer internship at Lucent Technology (with Dr. Gerard Holzmann and Dr. Margaret Smith), 1998.

Summer internship at SRI International (with Dr. José Meseguer), 1997.

Research assistant at Sinica Academia (with Dr. Tyng-Ruey Chuang), 1994.

**Professional activities**

## Program committee

- 5th International Symposium on Automated Technology for Verification and Analysis (ATVA 2007). Tokyo, Japan. October 2007.
- 12th International Conference on Implementation and Application of Automata (CIAA 2007). Prague, Czech Republic. July 2007.
- 4th International Symposium on Automated Technology for Verification and Analysis (ATVA 2006). Beijing, China. October 2006.
- 11th International Conference on Implementation and Application of Automata (CIAA 2006). Taipei, Taiwan. August 2006.
- 3rd International Symposium on Automated Technology for Verification and Analysis (ATVA 2005). Taipei, Taiwan. October 2005.
- 2nd International Symposium on Automated Technology for Verification and Analysis (ATVA 2004). Taipei, Taiwan. October 2004.

## Reviewer

- 5th ASIAN Symposium on Programming Languages and Systems (APLAS 2007). Singapore. November 2007.
- 19th International Conference on Computer Aided Verification. Berlin, Germany. July 2007.
- 1st International Conference on Language and Automata Theory and Applications (LATA 2007). Tarragona, Spain. March 2007.
- 10th International Conference on Developments in Language Theory (DLT 2006). Santa Barbara, USA. June 2006.
- 2nd ASIAN Symposium on Programming Languages and Systems (APLAS 2004). Taipei, Taiwan. November 2004.
- Formal Methods in System Design.
- Information and Computation.
- International Journal of Foundations of Computer Science.
- Journal of Information Science and Engineering.

## Short course

- 2007 Formosan Summer School on Logic, Language, and Computation (FLOLAC 2007). Taipei, Taiwan. July 2007.
- 2007 Honduras Summer Courses. Hsin-Chu, Taiwan. July 2007.
- 2006 Honduras Summer Courses. Hsin-Chu, Taiwan. July 2006.

**References**

Prof. Chung-Yang Ric Huang. National Taiwan University. [ric@cc.ee.ntu.edu.tw](mailto:ric@cc.ee.ntu.edu.tw).

Prof. Hsu-Chun Yen. National Taiwan University. [yen@cc.ee.ntu.edu.tw](mailto:yen@cc.ee.ntu.edu.tw).

Prof. Rajeev Alur. University of Pennsylvania. [alur@cis.upenn.edu](mailto:alur@cis.upenn.edu).

Prof. Edmund Clarke. Carnegie Mellon University. [emc@cs.cmu.edu](mailto:emc@cs.cmu.edu)

**Patent**

Kuang-Chien Chen and Bow-Yaw Wang. Integrated Proof Flow System and Method. Cadence Design Systems, Inc. US Patent 7124383. 17 October 2006.

**Publications****Papers at Refereed Conferences**

- Geng-Dian Huang and Bow-Yaw Wang. *Complete SAT-based Model Checking for Context-Free Processes*. 5th International Symposium on Automated Technology for Verification and Analysis. In volume 4762 of LNCS, pp 51–65. Tokyo, Japan. October, 2007.
- Bow-Yaw Wang. *Automatic Derivation of Compositional Rules in Automated Compositional Reasoning*. 18th International Conference on Concurrency Theory. In volume 4703 of LNCS, pp 303–316. Lisbon, Portugal. September, 2007.
- Ming-Hsien Tsai and Bow-Yaw Wang. *Formalization of CTL\* in the Calculus of Inductive Constructions*. 11th Annual Asian Computing Science Conference. In volume 4435 of LNCS, pp 317–331. Tokyo, Japan. December, 2006.
- Ming-Hsien Tsai and Bow-Yaw Wang. *Modular Formalization of Reactive Modules in Coq*. 11th Annual Asian Computing Science Conference. In volume 4435 of LNCS, pp 105–119. Tokyo, Japan. December, 2006.
- Bow-Yaw Wang. *On the Satisfiability of Modular Arithmetic Formulae*. 4th Automated Technology for Verification and Analysis. In volume 4218 of LNCS, pp 186–199. Beijing, China. October 2006.
- Bow-Yaw Wang. *Modeling and Analyzing Applications with Domain-Specific Languages by Reflective Rewriting: a Case Study*. 21st ACM Symposium on Applied Computing. Dijon, France. April, 2006.
- Bow-Yaw Wang. *Automatic Verification of a Model Checker by Reflection*. Eighth International Symposium on Practical Aspects of Declarative Languages. In volume 3819 of LNCS, pp 45–59. Charleston, South Carolina, USA. January, 2006.
- Bow-Yaw Wang. *Proving  $\forall\mu$ -Calculus Properties with SAT-Based Model Checking*. 25th IFIP WG 6.1 International Conference on Formal Techniques for Networked and Distributed Systems. In volume 3731 of LNCS, pp 113–127. Taipei, Taiwan. October, 2005.
- Bow-Yaw Wang. *Specification of an Infinite-State Local Model Checker in Rewriting Logic*. The Seventeenth International Conference on Software Engineering and Knowledge Engineering. Taipei, Taiwan. July, 2005.
- Fang Yu and Bow-Yaw Wang. *Toward Unbounded Model Checking for Region Automata*. 2nd International Symposium on Automated Technology for Verification and Analysis. In volume 3299 of LNCS, pp 20–33. Taipei, Taiwan, November 2004.
- Fang Yu, Bow-Yaw Wang, and Yao-Wen Huang. *Bounded Model Checking for Region Automata*. Joint International Conferences on Formal Modelling and Analysis of Timed Systems and Formal Techniques in Real-Time and Fault-Tolerant Systems. In volume 3253 of LNCS, pp 246–262. Grenoble, France. September 2004.
- Bow-Yaw Wang. *Mu-Calculus Model Checking in Maude*. 5th International Workshop on Rewriting Logic and Its Applications. Barcelona, Spain. March, 2004. In volume 117 of ENTCS, pp 135–152.
- Rajeev Alur and Bow-Yaw Wang. *Verifying Network Protocol Implementations by Symbolic Refinement Checking*. *Computer Aided Verification*. Paris, France. July, 2001.

- Rajeev Alur, Grosu Radu and Bow-Yaw Wang. *Automated Refinement Checking for Asynchronous Processes*. Formal Methods in Computer Aided Design. In volume 1954 of LNCS, pp 55–72. Austin, Texas. November, 2000.
- Bow-Yaw Wang, José Meseguer, and Carl A. Gunter. *Specification and formal verification of a PLAN algorithm in Maude*. Proceedings of the 2000 ICDCS workshop on Distributed System Validation and Verification. IEEE Computer Society. April 2000.
- Rajeev Alur and Bow-Yaw Wang. *“Next” Heuristic for On-the-fly Model Checking*. Concurrency Theory, Tenth International Conference. In volume 1664 of LNCS, pp 98–113. September, 1999.

#### Papers in Refereed Journals

- Fang Yu and Bow-Yaw Wang. Sat-based Model Checking for Region Automata. International Journal of Foundations of Computer Science, 17(4): 775-796, August 2006.
- F. Wang, K. Schmidt, F. Yu, G.D. Huang, and B.-Y. Wang. BDD-Based Safety-Analysis of Concurrent Software with Pointer Data Structures Using Graph Automorphism Symmetry Reduction. IEEE Transactions on Software Engineering, 30(6): 403–417, June 2004.
- Hsu-Chun Yen, Bow-Yaw Wang, and Ming-Sheng Yang. Deciding a Class of Path Formulas for Conflict-Free Petri Nets Theory of Computing Systems, 30(5):475-494, September/October 1997.
- Hsu-Chun Yen, Bow-Yaw Wang, and Ming-Sheng Yang. Some Complexity Results for Rings of Petri Nets. International Journal of Foundations of Computer Science. Vol. 5 No. 3&4: 281–292, 1994.