

Assistant Professor  
Department of Computer Science  
University of Illinois at Urbana-Champaign,  
201 N. Goodwin Ave., Urbana, Illinois 61801, USA.  
**Email:** madhu@cs.illinois.edu  
**Website:** <http://www.cs.illinois.edu/~madhu>  
**Phone:** 217-244-1323 (Work); 217-721-7977 (Cell)



## Education

- 1994 B.Sc., Mathematics, Loyola College, Madras University, Chennai, India.
- 1996 M.Sc., Theoretical Computer Science, Institute of Mathematical Sciences, Anna University, Chennai, India.
- 2002 Ph.D., Theoretical Computer Science, Institute of Mathematical Sciences, University of Madras, Chennai, India.  
Thesis title: *Control and Synthesis of Open Reactive Systems*

## Academic Positions:

- Assistant Professor, Department of Computer Science, University of Illinois at Urbana-Champaign, 12/2004 to Present.
- Postdoctoral Researcher, Department of Computer and Information Sciences, University of Pennsylvania, (with Prof. Rajeev Alur), 1/2002 to 12/2004.

## Areas of Research:

- Software Analysis and Verification
- Model Checking: Algorithms and Tools
- Reliability of concurrent programs
- Security
- Logic and Automata Theory

## Current research projects:

- Model-checking abstractions of programs (Getafix)
- Testing concurrent programs (Penelope)
- Annotation and proof mechanisms for safe concurrency (Accord)
- Finding security vulnerabilities in web browser extensions (VEX)
- Decidable logics for heaps
- Synthesizing programs
- Decidable automata models (visibly pushdown automata)

## Software/tools:

- Getafix - A boolean model-checker for concurrent and recursive programs
- VEX - Static analysis of web-browser extensions for security vulnerabilities
- Penelope - A testing tool for concurrent programs
- JIST - Java Interface Synthesis Tool

## Honors

- National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award, 2008.
- List of Teachers Ranked as Excellent by Their Students (for CS373: Theory of Computation) – Spring 2009 (University-wide)

## Publications

### Chapters in Books:

1. **P. Madhusudan**  
Visibly Pushdown Automata (Invited), to appear as a Chapter in upcoming Handbook of Automata: from Mathematics to Applications (AutoMathA), Edited by Jean-Eric Pin, European Science Foundation, To Appear.

### Articles In Journals:

1. **P. Madhusudan and P.S. Thiagarajan.**  
Branching time controllers for discrete event systems.  
*Theoretical Computer Science: CONCUR '98 Special Issue*, Vol. 274, No. 1-2, pp. 117-149, 2002.
2. **P. Madhusudan, W. Nam, and R. Alur.**  
Symbolic Computational Techniques for Solving Games.  
*Proc. of First International Workshop on Bounded Model Checking (BMC '03)*, Boulder, Colorado.  
*Electronic Notes in Theoretical Computer Science*, Vol. 89, No. 4, pp. 578-592, 2003.
3. **R. Alur, P. Madhusudan, and W. Nam.**  
Symbolic Computational Techniques for Solving Games.  
*Int'l Journal on Software Tools and Technology Transfer (STTT)*, Vol. 7 No. 2, pp. 118-128, 2005.
4. **R. Alur, S. La Torre, and P. Madhusudan.**  
Modular Strategies for Recursive Game Graphs.  
*Theoretical Computer Science*, Volume 354, Issue 2, 28 March 2006, pp. 230- 249, 2006.
5. **W. Nam, P. Madhusudan, and R. Alur.**  
Automatic symbolic compositional verification by learning assumptions.  
*Formal Methods in System Design (FMSD)*, Volume 32(3), pp. 207-234, 2008.
6. **R. Alur and P. Madhusudan**  
Adding nesting structure to words.  
*Journal of the ACM (JACM)* , Vol. 56(3), pages 1-43, ACM, 2009.
7. **P. Bisht, P. Madhusudan, and V.N. Venkatakrishnan.**  
CANDID: Dynamic Candidate Evaluations for Automatic Prevention of SQL Injection Attacks.  
*ACM Transactions on Information and System Security (TISSEC)*, Vol. 13(2), pp. 14:1-14:39, ACM, 2010.

## Articles in Conference Proceedings

1. **P. Madhusudan and P.S. Thiagarajan.**  
Controllers for Discrete Event Systems via Morphisms.  
In *Proc. 9th International Conf. on Concurrency Theory (CONCUR '98)*, Nice, France, Sept. 1998.  
Lecture Notes in Computer Science Vol. 1466, pp. 18-33, Springer, 1998. (Acc rate: 33.7%)
2. **O. Kupferman, P. Madhusudan, P.S. Thiagarajan, and M.Y. Vardi.**  
Open Systems in Reactive Environments: Control and Synthesis.  
In *Proc. 11th International Conf. on Concurrency Theory (CONCUR)*, Penn. State Univ., Sept. 2000.  
Lecture Notes in Computer Science, Vol. 1877, pp. 92-107, Springer, 2000. (Acc rate: 47.2%)
3. **P. Madhusudan.**  
Reasoning about Sequential and Branching Behaviours of Message Sequence Graphs.  
In *Proc. 28th International Colloquium on Automata, Languages and Programming (ICALP)*, Crete, Greece, July 2001.  
Lecture Notes in Computer Science Vol. 2076, pp. 809-820, Springer, 2001 (Acc rate: 38.46%).
4. **P. Madhusudan and P.S. Thiagarajan.**  
Distributed Controller Synthesis for Local Specifications.  
In *Proc. 28th Int'l Coll. on Automata, Languages and Programming (ICALP)*, Crete, Greece, July 2001.  
Lecture Notes in Computer Science Vol. 2076, pp. 396-407, Springer, 2001 (Acc rate: 38.46%).
5. **P. Madhusudan and B. Meenakshi.**  
Beyond Message Sequence Graphs.  
In *Proc. 21st Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, Bangalore, India, Dec. 2001. Lecture Notes in Computer Science Vol. 2245, pp. 256-267, Springer, 2001 (Acc rate: 31.5%).
6. **D. D'Souza and P. Madhusudan.**  
Timed Control Synthesis for External Specifications.  
In *Proc. 19th Annual Symposium on Theoretical Aspects of Computer Science (STACS)*, Antibes - Juan les Pins, France, March 2002. Lecture Notes in Computer Science Vol. 2285, pp. 571-582, Springer, 2002. (Acc rate: 23.92%)
7. **M. Leucker, P. Madhusudan, and S. Mukhopadhyay.**  
Dynamic Message Sequence Charts.  
In *Proc. 22nd Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, Kanpur, India, Dec. 2002. Lecture Notes in Computer Science Vol. 2556, pp. 253-264, Springer, 2002. (Acc rate: 24.52%).
8. **P. Madhusudan and P.S. Thiagarajan.**  
A Decidable Class of Asynchronous Distributed Controllers.  
In *Proc. 13th Int'l Conf. on Concurrency Theory (CONCUR)*, Brno, Czech Republic, 2002, Lecture Notes in Computer Science Vol. 2421, pp. 145-160, Springer, 2002. (Acc rate: 31.68%)
9. **R. Alur, S. La Torre, and P. Madhusudan.**  
Modular Strategies for Recursive Game Graphs.  
In *Proc. 9th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Warsaw, Poland, April 2003. Lecture Notes in Computer Science Vol. 2619, pp. 363-378, Springer, 2003. (Acc rate: 25%)
10. **P. Madhusudan.**  
Model-checking Trace Event Structures.  
In *Proc. 18th Annual IEEE Symposium on Logic in Computer Science (LICS)*, pp. 371-380, Ottawa, Canada, 2003, IEEE Computer Society. (Acc rate: 27.87%)
11. **R. Alur, S. La Torre, and P. Madhusudan.**  
Playing Games with Boxes and Diamonds.  
In *Proc. 14th International Conference on Concurrency Theory (CONCUR)*, Marseille, France, 2003.  
Lecture Notes in Computer Science Vol. 2761, pp 127-141, Springer, 2003. (Acc rate: 27.1%)

12. **R. Alur, S. La Torre, and P. Madhusudan.**  
Modular Strategies for Infinite Games on Recursive Game Graphs.  
In *Proc. 15th Computer-Aided Verification Conference (CAV)*, Boulder, Colorado, July 2003.  
Lecture Notes in Computer Science Vol. 2725, pp. 67-79, Springer, 2003. (Acc rate: 36.8%)
13. **P. Bouyer, D. D'Souza, P. Madhusudan, and A. Petit.**  
Timed Control with Partial Observability.  
In *Proc. Int'l Conference on Computer-Aided Verification (CAV)*, Boulder, Colorado, July 2003.  
Lecture Notes in Computer Science Volume 2725, pp. 180-192, Springer, 2003. (Acc rate: 36.8%)
14. **R. Alur, K. Etessami, and P. Madhusudan.**  
A Temporal Logic of Nested Calls and Returns.  
In *Proc. 10th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*,  
Lecture Notes in Computer Science Vol. 2988, pp. 467-481, Barcelona, Spain, Springer, 2004. (Acc rate: 25.5%)
15. **R. Alur and P. Madhusudan.**  
Visibly Pushdown Languages.  
In *Proc. of the 36th Annual ACM Symposium on Theory of Computing (STOC)*, pp. 202-211, Chicago, USA, ACM 2004.  
(Acc rate: 25.8%)
16. **R. Alur, P. Madhusudan.**  
Decision Problems for Timed Automata: A Survey, (Invited)  
*Formal Methods for the Design of Real-Time Systems, International School on Formal Methods for the  
Design of Computer, Communication and Software Systems, SFM-RT 2004*, Bertinoro, Italy, September 13-18, 2004,  
Lecture Notes in Computer Science, Vol. 3185, pp. 1-24, Springer, 2004.
17. **R. Alur, M. Bernadsky, and P. Madhusudan.**  
Optimal Reachability for Weighted Timed Games.  
In *Proc. 31st International Colloquium on Automata, Languages, and Programming (ICALP)*, Turku, Finland, Lecture  
Notes in Computer Science Vol. 3142, pp. 122-133, Springer, 2004. (Acc rate: 26.2%)
18. **C. Löding, P. Madhusudan, O. Serre.**  
Visibly Pushdown Games.  
In *Proc. 24th Int'l Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*,  
Chennai, India, December 2004, Lecture Notes in Computer Science Vol. 3328, pp. 408-420, Springer, 2004.  
(Acc rate: 21.6%)
19. **R. Alur, S. Chaudhuri, K. Etessami, and P. Madhusudan.**  
On-the-Fly Reachability and Cycle Detection for Recursive State Machines.  
In *Proc. 11th International Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*,  
Edinburgh, U.K., April 2005, Lecture Notes in Computer Science Vol. 3440, pp. 61-76, Springer, 2005.  
(Acc rate: 23.4%)
20. **R. Alur, P. Cerny, P. Madhusudan, and W. Nam.**  
Synthesis of Interface Specifications for Java Classes.  
In *Proc. 32nd Annual ACM SIGPLAN-SIGACT Symp. on Principles of Prog. Languages (POPL)*, Long Beach CA, Jan.  
2005, pp. 98-109, ACM, 2005. (Acc rate: 18%).
21. **R. Alur, V. Kumar, P. Madhusudan, and M. Viswanathan.**  
Congruences for Visibly Pushdown Languages.  
In *Proc. 32nd Int'l Coll. on Automata, Lang. and Prog. (ICALP)*, Lisbon, Portugal, July 2005, Lecture Notes in Computer  
Science Vol. 3580, pp. 1102-1114, Springer, 2005. (Track B Acc rate: 32%)
22. **R. Alur, S. La Torre, and P. Madhusudan.**  
Perturbed Timed Automata.  
In *Proc. Hybrid Systems: Computation and Control (HSCC)*, Zurich, Switzerland, March 2005, Lecture Notes in  
Computer Science Vol. 3414, pp. 70-85, Springer, 2005. (Acc rate: 44%)

23. **P. Madhusudan, P.S. Thiagarajan, and S. Yang.**  
The MSO Theory of Connectedly Communicating Processes.  
*In Proc. 25th Int'l Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS)*, Hyderabad, India, Dec. 2005, Lecture Notes in Computer Science Vol. 3821, pp. 201-212, Springer, 2005. (Acc rate: 22.75%).
24. **R. Alur, P. Madhusudan, W. Nam.**  
Symbolic Compositional Verification by Learning Assumptions.  
*In Proc. 17th Int'l Conf. on Computer Aided Verification (CAV)*, Edinburgh, UK, July 2005, Lecture Notes in Computer Science Vol. 3576, pp. 548-562, Springer, 2005. (Acc rate: 26%)
25. **R. Alur, S. Chaudhuri, and P. Madhusudan.**  
A Fixpoint Calculus for Local and Global Program Flows.  
*In Proc. 33rd Annual ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL)*, Charleston, USA, Jan. 2006, pp. 153-165, ACM, 2006. (Acc rate: 19.7%).
26. **R. Alur and P. Madhusudan.**  
Adding Nesting Structure to Words. (Invited)  
*In Proc., 10th Int'l Conference on Developments in Language Theory (DLT)*, Santa Barbara, USA, June 2006, Lecture Notes in Computer Science Vol. 4036, pp. 1-13, Springer, 2006.
27. **V. Kumar, P. Madhusudan, and M. Viswanathan.**  
Minimization, Learning, and Conformance Testing of Boolean Programs.  
*In Proc. of Int'l Conf on Concurrency Theory (CONCUR)*, Bonn, Germany, August 2006, Lecture Notes in Computer Science Vol. 4137, pp. 203-217, Springer, 2006. (Acc rate: 28.7%)
28. **R. Alur, S. Chaudhuri, and P. Madhusudan.**  
Languages of nested trees.  
*In Proc., 18th Int'l Conference on Computer Aided Verification (CAV)*, Seattle, USA, August 2006, Lecture Notes in Computer Science Vol. 4144, pp. 329-342, Springer, 2006. (Acc rate: 28.9%)
29. **A. Farzan and P. Madhusudan.**  
Causal Atomicity  
*In Proc., 18th Int'l Conference on Computer Aided Verification (CAV)*, Seattle, USA, August 2006, Lecture Notes in Computer Science Vol. 4144, pp. 315-328, Springer, 2006. (Acc rate: 28.9%)
30. **Viraj Kumar, P. Madhusudan and Mahesh Viswanathan.**  
Visibly pushdown automata for streaming XML  
*Proc. of 16th International Conference on World Wide Web, (WWW)*, Banff, Alberta, Canada, May 2007, pages 1053-1062, ACM, 2007. (Acc rate: 15%)
31. **P. Madhusudan.**  
Learning Algorithms and Formal Verification (Invited Tutorial).  
*Proc., 8th International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)*, Nice, France, January 2007, Lecture Notes in Computer Science Vol. 4349, p. 214, Springer, 2007.
32. **A. Farzan and P. Madhusudan.**  
Causal Dataflow Analysis for Concurrent Programs.  
*Proc., 13th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Braga, Portugal March 2007, Lecture Notes in Computer Science Vol. 4424, pp. 102-116, Springer, 2007. (Acc rate: 26.4%)
33. **S. La Torre, P. Madhusudan and G. Parlato**  
A Robust Class of Context-Sensitive Languages.  
*Proc. of 22nd IEEE Symposium on Logic in Computer Science (LICS)*, Wroclaw, Poland, July 2007, pages 161-170, IEEE Computer Society, 2007. (Acc rate: 29.3%)
34. **Sruthi Bandhakavi, Prithvi Bisht, P. Madhusudan and V.N. Venkatakrishnan.**  
CANDID: Preventing SQL Injection Attacks using Dynamic Candidate Evaluations  
*Proc. of 14th ACM Conference on Computer and Communications Security (CCS)* Alexandria, USA, October 2007, pp. 12-24, ACM, 2007. (Acc rate: 18.2%).

35. **S. La Torre, P. Madhusudan and G. Parlato.**  
Context-Bounded Analysis of Concurrent Queue Systems  
*Proc. of 14th Int'l Conf. on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)*, Budapest, Hungary, April 2008, Lecture Notes in Computer Science Vol. 4963, pp. 299-314, Springer, 2008. (Acc rate: 25.6%).
36. **S. La Torre, G. Parlato and P. Madhusudan.**  
An Infinite Automaton Characterization of Double Exponential Time  
*Proc. of 17th Annual Conference on Computer Science Logic (CSL)*, Bertinoro, Italy, September 2008, Lecture Notes in Computer Science Vol. 5213, pp. 33-48, Springer, 2008. (Acc rate: 35.6%)
37. **A. Farzan and P. Madhusudan.**  
Monitoring Atomicity in Concurrent Programs  
*Proc. of 14th Int'l Conf. on Computer Aided Verification (CAV)*, Princeton, NJ, USA, July 2008, Lecture Notes in Computer Science Vol. 5123, pp. 52-65, Springer, 2008. (Acc rate: 35.9%).
38. **L. Olson, C. Gunter, P. Madhusudan.**  
A Formal Framework for Reflective Database Access Control Policies  
*Proc. of 15th ACM Conference on Computer and Communications Security (CCS)*, Alexandria, USA, October 2008, pp. 289-298, ACM, 2008. (Acc rate: 18%)
39. **A. Farzan and P. Madhusudan.**  
The Complexity of Predicting Atomicity Violations  
*Proc. of 15th Int'l Conf. on Tools and Algorithms for the Construction & Analysis of Systems (TACAS)*, York, UK, March 2009, Lecture Notes in Computer Science Vol. 5505, pp. 155-169, Springer, 2009. (Acc rate: 26.7%)
40. **S. La Torre, P. Madhusudan, G. Parlato.**  
Analyzing Recursive Programs using a Fixed-point Calculus  
*Proc. ACM SIGPLAN Conf. on Programming Language Design and Implementation (PLDI)*, Dublin, Ireland, June 2009, pp. 211-222, ACM, 2009. (Acc rate: 21%)
41. **P. Madhusudan, M. Viswanathan.**  
Query automata for nested words  
*Proc. of Mathematical Foundations of Computer Science (MFCS)*, Novy Smokovec, Slovakia, August 2009, Lecture Notes in Computer Science Vol 5734, page 561-573, Springer, 2009. (Acc rate: 37.8%)
42. **S. La Torre, P. Madhusudan, G. Parlato.**  
Reducing Context-bounded Concurrent Reachability to Sequential Reachability  
*Proc. of 21st Int'l Conference on Computer Aided Verification (CAV)*, Grenoble, France, June 2009, Lecture Notes in Computer Science Vol. 5643, pp. 477-492, Springer, 2009. (Acc rate: 26.7%)
43. **A. Farzan, P. Madhusudan, F. Sorrentino.**  
Meta-analysis for Atomicity Violations under Nested Locking  
*Proc. of 21st Int'l Conference on Computer Aided Verification (CAV)*, Grenoble, France, June 2009, Lecture Notes in Computer Science Vol. 5643, pp. 248-262, Springer, 2009. (Acc rate: 26.7%)
44. **S. La Torre, P. Madhusudan, G. Parlato.**  
The language theory of bounded context-switching  
*Proc. 9th Latin American Theoretical Informatics Symposium (LATIN)*, Oaxaca, Mexico, April 2010, Lecture Notes in Computer Science Vol. 6034, pp. 96-107, Springer, 2010. (Acc rate: 36.1%)
45. **S. La Torre, P. Madhusudan, G. Parlato.**  
Model-checking Parameterized Concurrent Programs using Linear Interfaces  
*Proc. of Int'l Conference on Computer Aided Verification (CAV)*, Edinburgh, UK, 2010, Lecture Notes in Computer Science, Springer. (Acc rate: 33.7%)
46. **S. Bandhakavi, S. King, P. Madhusudan, M. Winslett.**  
VEX: Vetting Browser Extensions For Security Vulnerabilities.  
*Proc. of 19th USENIX Security Symposium*, Washington, DC, USA, USENIX, 2010. (Acc rate: 14.8%)

47. **A. Farzan, P. Madhusudan, F. Sorrentino.**

PENELOPE: Weaving Threads to Expose Atomicity Violations

Proc. of *ACM SIGSOFT Int'l Symp. on the Foundations of Software Engineering (FSE)*, Santa Fe, New Mexico, USA, November 2010, ACM, 2010 (to appear). (Acc rate: 20.0%)

### Pending Publications

1. **S. La Torre, P. Madhusudan, and G. Parlato.**  
Sequentializing Parameterized Programs  
Under submission.
2. **P. Madhusudan and G. Parlato**  
The Tree Width of Automata with Auxiliary Storage  
Under submission.
3. **Rajesh Karmani, P. Madhusudan, and Brandon Moore**  
Thread Contracts for Race Freedom  
Under submission.

### Invited Lectures

Title	Venue	Location	Year
Making the Stack Visible: Visibly Pushdown Automata	Logic and Computational Complexity (LCC) 2005 Workshop with LICS	Chicago, IL	June 2005
Mining Dynamic Interfaces	Foundations of Interface Technologies (FIT) 2005 Workshop with CONCUR	San Francisco, CA	August 2005
Automata theory for nested structures	GALOP'06: Games for Logic and Programming Languages, part of FLoC (Federated Logic Conference)	Seattle, WA	2006
Visibly pushdown automata for XML	EROW: Workshop on Emerging Research Opportunities in Web Data Management (held with ICDT)	Barcelona, Spain	January 2007
Learning Algorithms and Formal Verification	Invited tutorial, 8th Int'l Conference on Verification, Model Checking and Abstract Interpretation (VMCAI)	Nice, France	January 2007
Learning algorithms and formal verification	Institute of Mathematic Sciences	Chennai, India	February, 2007
Logic, Automata, and Algorithms	Invited course at Universita degli Studi di Salerno	Salerno, Italy	June 2007
Multi-stack Automata: A New Tractable Subclass	Talk at Microsoft Research	Redmond, WA	May 2007
Analyzing heaps using automata	IFIP Working Group 2.2 (International Federation for Information Processing)	Nancy, France,	September, 2007
Monitoring Serializability	Talk at Microsoft Research	Redmond, WA	August, 2008
Finding Concurrency Bugs through Atomicity Violations	UPCRC Seminar (audience: UIUC, Microsoft, Intel)	Urbana, USA	October, 2008
Annotations for race-freedom	Dagstuhl Workshop on Design and Validation of Concurrent Systems.	Dagstuhl, Germany	September 2009
Annotations for Race-freedom	Chennai Mathematical Institute (CMI)	Chennai, India	August, 2009
Provable annotations for race-freedom	Technische Universitat Darmstadt (Darmstadt University)	Darmstadt, Germany	September, 2009
Correctness projects in UPCRC	UPCRC Summit (audience: UIUC, Microsoft, Intel)	Urbana, USA.	March, 2010
Deciding automata with auxiliary storage	Invited talk at International Conference on Implementation and Application of Automata (CIAA)	Winnipeg, Canada	August, 2010

## Other Publications

1. **P. Madhusudan.** "Control and Synthesis of Open Reactive Systems." Ph.D. Dissertation, Madras University, Chennai, India, Nov. 2002.
2. **P. Madhusudan.** "An On-the-fly Algorithm for Linear-time Temporal Logic." M.Sc. Thesis, Anna University, Chennai, India, Aug. 1996.
3. **D. D'Souza and P. Madhusudan.** "An On-the-fly Verification Algorithm for Product-PTL." In Proc., National Seminar for Theoretical Computer Science, Chennai, India, June 1997.
4. **R. Alur, V. Kumar, P. Madhusudan, M. Viswanathan.** "Congruences for Visibly Pushdown Languages." UIUC Technical Report UIUCDCS-R-2005-2565, Available at <http://hdl.handle.net/2142/11214>, 2005.
5. **V. Kumar, P. Madhusudan, M. Viswanathan.** "Minimization, Learning, and Conformance Testing of Boolean Programs." UIUC Technical Report UIUCDCS-R-2006-2736, Available at <http://hdl.handle.net/2142/11210>, 2006.
6. **Azadeh Farzan, P. Madhusudan.** "Causal Dataflow Analysis for Concurrent Programs." UIUC Technical Report UIUCDCS-R-2007-2806, Available at <http://hdl.handle.net/2142/11347>, 2007.
7. **S. Adve, V. Adve, G. Agha, M.I. Frank, M.J. Garzaran, J.H.Hart, W.W. Hwu, R.E. Johnson, L.V. Kale, R. Kumar, P. Madhusudan, D. Marinov, K. Nahrstedt, D. Padua, S. Patel, G. Rosu, D. Roth, M.Snir, J. Torrellas, C. Zilles.** "Parallel Computing at Illinois: The UPCRC Agenda," 2008.
8. **S. La Torre, P. Madhusudan, G. Parlato.** "Model-checking Parameterized Concurrent Programs using Linear Interfaces." UIUC IDEALS Technical Report, Available at <http://hdl.handle.net/2142/15410>, 2010.
9. **R. Karmani, P. Madhusudan, B. Moore.** "Thread Contracts for Race-Freedom." UIUC IDEALS Technical Report, Available at <http://hdl.handle.net/2142/15412>, 2010.
10. **P. Madhusudan, G. Parlato.** "The Tree Width of Automata with Auxiliary Storage." UIUC IDEALS Technical Report, Available at <http://hdl.handle.net/2142/15433>, 2010.

## Grants, contracts and gifts

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding
2005-	Microsoft Research Grant	Microsoft	\$10,000
2008-2012	NSF Career Grant	NSF	\$400,000
2008-2009	CSR-EHCS (EHS), TM:Compositional Technology for Safety-Critical Modular Systems	NSF	\$300,000
2009-2012	TC: Small: Keeping Jack in the Box: Confining the Role of Untrusted Inputs in Web Scenarios	NSF	\$450,000
2008-2011	UPCRC: Universal Parallel Computing Research Center (Lead: Correctness group)	Microsoft/Intel (\$10million center)	2 Graduate Students and 1 month summer salary
PENDING	Trustworthy Computing	NSF	\$500,000

## Graduate students pursuing Ph.D.

Student Name	Expected year of graduation
Pranav Garg (proving concurrent programs safe)	2013
Edgar Pek (model-checking, static analysis)	2012
Francesco Sorrentino (testing concurrent programs)	2011
Xiaokang Qui (decidable logics for heaps)	2011
Sruthi Bandhakavi (co-advised) (security of web browser extensions)	2010
Worked extensively and informally advised Azadeh Farzan, now a faculty at University of Toronto.	

## Post-doctoral Associates

- Gennaro Parlato , 2006-2010. Joined LIAFA, Paris, in 2010.

## Service to Field

### Program Committees/ Service to Field

1. Program Committee, **FORMATS and FTRTFT 2004** Joint Conference on Formal Modelling and Analysis of Timed Systems (FORMATS) and Formal Techniques in Real-Time and Fault Tolerant System (FTRTFT).
2. Program Committee, Games in Design and Verification (**GDV**), 2005 (with CAV 2005).
3. Program Committee, 17th Int'l Conference on Computer Aided Verification (**CAV**), Edinburgh, Scotland, 2005.
4. Program Committee, 25th Int'l Conference on Foundations of Software Technology and Theoretical Computer Science (**FSTTCS**), Hyderabad, India, 2005.
5. Program Committee, ACM Symposium on Applied Computing (**SAC**): Technical Track on Software Verification, 2006.
6. Program Committee, 34th International Colloquium on Automata, Languages and Programming (**ICALP**), Wroclaw, Poland, 2007.
7. Program Committee, 19th International Conference on Concurrency Theory (**CONCUR**), Toronto, Canada, 2008.
8. Program Committee, Sixth ASIAN Symposium on Programming Languages and Systems (**APLAS**), Bangalore, India, 2008.
9. Program Committee, Annual IEEE Symposium on Logic in Computer Science (**LICS**), Los Angeles, USA, 2009.
10. Program Committee: 16th International Symposium on Temporal Representation and Reasoning (**TIME**), Brixen-Bressanone, Italy, 2009.
11. Program Committee: 21st Int'l Conf on Computer Aided Verification (**CAV**), Grenoble, France, 2009.
12. External Review Committee: ACM SIGPLAN Conference on Programming Language Design and Implementation (**PLDI**), Dublin, Ireland, 2009.
13. Program Committee, 27th Symposium on Theoretical Aspects of Computer Science (**STACS**), Nancy, France, 2010.
14. Program Committee: Int'l Symposium on Games, Automata, Logics and Formal Verification (**GANDALF**), Minori, Amalfi Coast, Italy, 2010.
15. Program Committee: 8th Int'l Symposium on Automated Technology for Verification and Analysis (**ATVA**), Singapore, 2010.
16. Program Committee: 30th Int'l Conference on Foundations of Software Tech. and Theoretical Comp. Sc. (**FSTTCS**), Chennai, India, 2010.

### Conferences Organized or Chaired

1. Program Chair and Organizer, Workshop on Software Verification, 2005 (part of FSTTCS 2005)
2. Program Chair, Workshop on Games in Design and Verification (**GDV'06**); co-located with FLoC (Federated Logic Conference), Seattle, USA, 2006.
3. Program Chair, 9th International Workshop on Verification of Infinite-State Systems, (**INFINITY**), Lisbon, Portugal, 2007.
4. Program Chair and Organizer, Workshop on Security and Reliability in Software Systems, with FSTTCS, Bangalore, India, 2008.
5. Organizer: **Dagstuhl** Workshop on Design and Validation of Concurrent Systems, Dagstuhl, Germany, August, 2009.