

**CONTACT INFORMATION**      Research Associate      *Mobile:* +1-217-819-8217  
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**RESEARCH INTERESTS**      My research interests are in the areas of program analysis and verification, verification of systems with infinitely many states, software model-checking, logic, automata theory, and graph theory.

**EDUCATION**

**Doctor of Philosophy (Ph.D.) in Computer Science**      *11 April 2006*  
 Università degli Studi di Salerno, Italy.  
 Advisors: Prof. Salvatore La Torre  
 Thesis title: *On the Model-Checking of Hierarchical and Recursive state Machines*

**Laurea Degree (M.Sc. equivalent) in Computer Science**      *21 March 2002*  
 Università degli Studi di Salerno, Italy.  
 Thesis title: *Raggiungibilità e Scoperta dei Cicli in Macchine a Stati Gerarchiche (in Italian)*  
 Grade: 110/110 summa cum laude

**RESEARCH AND WORK EXPERIENCE**

**Postdoctoral Research Associate, University of Illinois at Urbana-Champaign**      *May 2008–present*  
 Dept. of Computer Science  
 Hosted by Prof. P. Madhusudan  
 Urbana, USA.

**Visiting Scholar, University of Illinois at Urbana-Champaign**      *May 2006–May 2008*  
 Dept. of Computer Science,  
 Hosted by Prof. P. Madhusudan  
 Urbana, USA.

**Postdoctoral Research Associate, Università degli Studi di Salerno**      *Jan 2007–Dec 2009*  
 Dept. of Computer Science  
 Hosted by Prof. Margherita Napoli  
 Fisciano, Italy.

**Postdoctoral Research Associate, Università degli Studi di Salerno**      *Feb 2006–Aug 2006*  
 Dept. of Computer Science  
 Hosted by Prof. Margherita Napoli  
 Fisciano, Italy.

**PROFESSIONAL  
ACTIVITIES****Refereed journals and conferences:**

Theoretical Computer Science, Elsevier Press.  
International Journal of Foundations of Computer Science (IJFCS)

Int'l Conference on Computer Aided Verification (CAV)  
Int'l Conference on Concurrency Theory (CONCUR)  
Int'l Conference Developments in Language Theory (DLT)  
Int'l Workshop on Formal Methods for Industrial Critical Systems (FMICS)  
Int'l Conference on Formal Engineering Methods (ICFEM)  
Int'l Symposium on Logic in Computer Science (LICS)  
Int'l Symposium on Theoretical Aspects of Computer Science (STACS)

**LECTURES,  
COLLOQUIA, AND  
CONFERENCE  
PRESENTATIONS****Analyzing Recursive Programs using Fixed-point Calculus**

University of Illinois at Urbana-Champaign  
Urbana, IL, USA, October 2009.

**Writing Model-Checkers for Boolean Recursive Programs using a Fixed-Point Calculus**

LIAFA, Université Paris Diderot Paris 7  
France, September 2009.

**Reducing Context-bounded Concurrent Reachability to Sequential Reachability.**

Conference on Computer Aided Verification (CAV)  
Grenoble, France, June 2009.

**An Infinite Automaton Characterization of Double Exponential Time.**

Conference on Computer Science Logic (CSL)  
Bertinoro, Italy, September 2008.

**Context-Bounded Analysis of Concurrent Queue Systems.**

International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS)  
Budapest, Hungary, April 2008.

**On the Complexity of LTL Model-Checking of Recursive State Machines.**

International Colloquium on Automata, Languages and Programming (ICALP)  
Wroclaw, Poland, July 2007.

**Hierarchical and Recursive State Machines with Context-Dependent Properties**

International Colloquium on Automata, Languages and Programming (ICALP)  
Eindhoven, The Netherlands, July 2003.

**TEACHING  
EXPERIENCE**

Teaching assistant in Theory of Computation and Automata and Formal Languages classes at Università degli Studi di Salerno, Italy. Spring Semester 2005.

## PUBLICATIONS

Publications are available online at <http://www.cs.uiuc.edu/~parlato>

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- THESES
- [T1] **On the Model Checking of Hierarchical and Recursive State Machines.** Dissertation (Ph.D.), Università degli Studi di Salerno, Italy, April 2006.
  - [T2] **Raggiungibilità e Scoperta dei Cicli in Macchine a Stati Gerarchiche.** Laurea degree's thesis, Università degli Studi di Salerno, Italy, March 2002.

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CONFERENCE PUBLICATIONS

- [1] **The Language Theory of Bounded Context-Switching.** *To appear in Proc. 9th Latin American Theoretical Informatics Symposium (LATIN'10)*, Oaxaca, Mexico, April 2010 (with S. La Torre and P. Madhusudan).
- [2] **Reducing Context-bounded Concurrent Reachability to Sequential Reachability.** *In Proc. 21st International Conference on Computer Aided Verification (CAV '09)*, volume 5643 of LNCS, pages 477–492, Grenoble, France, June 2009 (with S. La Torre and P. Madhusudan).
- [3] **Analyzing Recursive Programs using Fixed-point Calculus.** *In Proc. International Conference on Programming Language Design and Implementation (PLDI'09)*, ACM, pages 211–222, Dublin, Ireland, June 2009 (with S. La Torre and P. Madhusudan).
- [4] **An Infinite Automaton Characterization of Double Exponential Time.** *In Proc. 17th EACSL Annual Conference on Computer Science Logic (CSL'08)*, volume 5213 of LNCS, pages 33–48, Bertinoro, Italy, September 2008 (with S. La Torre and P. Madhusudan).
- [5] **Context-Bounded Analysis of Concurrent Queue Systems.** *In Proc. 14th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS'08)*, volume 4963 of LNCS, pages 299–314, Budapest, Hungary, March 2008 (with S. La Torre and P. Madhusudan).
- [6] **A Robust Class of Context-Sensitive Languages.** *In Proc. 18th Annual IEEE Symp. on Logic in Computer Science (LICS '07)*, pages 161–170, IEEE, Wroclaw, Poland, July 2007 (with S. La Torre and P. Madhusudan).
- [7] **On the Complexity of LTL Model-Checking of Recursive State Machines.** *In Proc. 34th Int'l Coll. on Automata, Languages and Programming (ICALP '07)*, volume 4596 of LNCS, pages 937–948, Wroclaw, Poland, July 2007 (with S. La Torre).
- [8] **Verification of Succinct Hierarchical State Machines.** *1th Int'l Conference on Language and Automata Theory and Applications (LATA'07)*, Tarragona, Spain, March-April 2007 (with S. La Torre, M. Napoli and M. Parente).
- [9] **Improvements for Truthful Mechanisms with Verifiable One-Parameter Selfish Agents.** *In Proc. 3rd Workshop on Approximation and Online Algorithms (WAOA'05)*, volume 3879 of LNCS, pages 147–160, Palma de Mallorca, Spain, October 2005 (with A. Ferrante, F. Sorrentino and C. Ventre).
- [10] **A Linear Time Algorithm for the Minimum Weighted Feedback Vertex Set on Diamonds.** *3rd Cologne Twente Workshop on Graphs and Combinatorial Optimization (CTW'04)*, Lovenno di Menaggio, Como, Italy, May-June 2004 (with F. Carrabs, R. Cerulli, and M. Gentili).

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- [11] **Hierarchical and Recursive State Machines with Context-Dependent Properties.** *In Proc. 30th Int'l Coll. on Automata, Languages and Programming (ICALP '03)*, volume 2719 of LNCS, pages 776–789, Eindhoven, The Netherlands, June-July 2003 (with S. La Torre, M. Napoli and M. Parente).
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**JOURNAL  
ARTICLES**

- [12] **Fast Payment Schemes for Truthful Mechanisms with Verification.** *Theor. Comput.Sci.*, vol. 410, n. 8-10, March, 2009, pp. 886-899 (with A. Ferrante, F. Sorrentino, and C. Ventre).
- [13] **Verification of Scope-Dependent Hierarchical State Machines.** *Information and Computation*, vol. 206, n. 9-10, Sept-Oct, 2008, pp. 1161-1177 (with S. La Torre, M. Napoli, and M. Parente).
- [14] **A linear time algorithm for the minimum Weighted Feedback Vertex Set on diamonds.** *Information Processing Letters*, vol. 94, n. 1, Apr. 15, 2005, pp. 29-35 (with F. Carrabs, R. Cerulli, and M. Gentili).
- [15] **Minimum Weighted Feedback Vertex Set on Diamonds.** *Electronic Notes in Discrete Mathematics*, vol. 17, n. 1, Oct. 20, 2004, pp. 87-91 (with F. Carrabs, R. Cerulli, and M. Gentili).
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**OTHER  
REPORTS**

- [R1] **Automata with Auxialiry Storage, Graph Automata, and Tree-Width.** Unpublished manuscript, Urbana, 2009 (with P. Madhusudan).
- [R2] **Sequentializing Parameterized Programs.** Unpublished manuscript, Urbana, 2009 (with S. La Torre, and P. Madhusudan).
- [R3] **Model-checking Parameterized Concurrent Programs Using Linear Interfaces.** Unpublished manuscript, Urbana, 2009 (with S. La Torre, and P. Madhusudan).
- [R4] **GETAFIX: Writing model-checkers using fixed-points.** Unpublished manuscript, Urbana, 2009 (with S. La Torre, and P. Madhusudan).
- [R5] **On the Complexity of CARET Model-Checking.** Unpublished manuscript, Salerno, 2009 (with S. La Torre, and M. Napoli).
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**SOFTWARE**

- [S1] **Getafix: A symbolic model-checker for recursive programs.**  
<http://www.cs.uiuc.edu/~madhu/getafix/>  
(with S. La Torre, and P. Madhusudan).