

Curriculum Vitæ

Luca de Alfaro

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RESEARCH INTERESTS

System design: embedded software,
interface specification for component-based design,
high-level design languages and tools,
formal methods for system design.

System modeling: probabilistic, real-time, and embedded systems.

System verification: interface compatibility, modular verification,
model checking, probabilistic verification.

Foundations: concurrency theory, automata theory, verification algorithms,
game theory.

PERSONAL

Citizenship: Italian. US Permanent Resident.
Languages: English, Italian, French, some German.
Date of Birth: January 6, 1966.

EDUCATION

January 1998	Ph.D., Computer Science	Stanford University
September 1997	M.S., Computer Science	Stanford University
September 1995	Doctorate, System and Computer Engineering	Politecnico di Torino, Italy
July 1990	B.S. Electrical Engineering	Politecnico di Torino, Italy

ACADEMIC EMPLOYMENT

July 2005 to present	Associate Professor, Department of Computer Engineering	University of California, Santa Cruz
July 2001 to June 2005	Assistant Professor, Department of Computer Engineering	University of California, Santa Cruz
June 2000 to July 2001	Assistant Research Engineer, Electrical Engineering and Computer Sciences	University of California, Berkeley
January 1998 to June 2000	Postdoctoral Scientist, Electrical Engineering and Computer Sciences	University of California, Berkeley
September 1991 to December 1997	Research Assistant, Department of Computer Science	Stanford University

HONORS

- NSF Early Faculty Career Award, 2001
- Best paper award, 12th International Conference on Concurrency Theory (CONCUR), 2001.
- Samuel Thesis Award, Stanford University, 1998
- Nominee for ACM Best Dissertation Award, Stanford University, 1998
- Graduation Cum Laude, Politecnico di Torino, Italy, 1990

VISITING POSITIONS

1. Max-Planck Institute for Computer Science, Saarbrücken, Germany, April 1999.
2. Department of Computer Science, Birmingham University, May 1999.
3. Laboratory for Computer Science, MIT, February–April 2001.
4. Digital Equipment Corporation, Marlborough, Massachusetts, September–November 2000.

PUBLICATIONS

Books and Monographs

1. L. de Alfaro. *Formal verification of Probabilistic Systems*. Ph.D. Thesis, Stanford University, 1997. Technical Report STAN-CS-TR-98-1601.
2. L. de Alfaro. *Logica temporale e sistemi in tempo reale*. Doctoral Thesis, Politecnico di Torino, 1994.
3. L. de Alfaro. *Modem per canali ad alto tasso di errore: Codici e protocolli di comunicazione*. Bachelor Thesis, Politecnico di Torino, 1990.
4. A. Prat Bastai and L. de Alfaro. *Molecole ed Energia*. Petrini editore, 1985.

Edited Books

1. M. Abadi and L. de Alfaro (editors). *CONCUR: International Conference on Concurrency Theory*. Lecture Notes in Computer Science 3653, Springer-Verlag, 2005.
2. L. de Alfaro and S. Gilmore (editors). *Process Algebra and Probabilistic Methods*. Lecture Notes in Computer Science 2165, Springer-Verlag, 2001.

Articles

Refereed Conference Papers

1. L. de Alfaro, M. Faella, A. Legay. An Introduction to the Tool Ticc. In *Proc. of TrustWorthy Workshop Software*, Dagstuhl Seminar Proceedings, Internationales Begegnungs- und Forschungszentrum für Informatik (IBFI), Schloss Dagstuhl, Germany, 2006.
2. K. Chatterjee, L. de Alfaro, and T.A. Henzinger. Strategy Improvement for Concurrent Reachability Games. In *QEST 06: International Conference on the Quantitative Evaluation of Systems*, IEEE Computer Society Press, 2006.
3. K. Chatterjee, L. de Alfaro, M. Faella, T.A. Henzinger, R. Majumdar, and M. Stoelinga. Compositional Quantitative Reasoning. In *QEST 06: International Conference on the Quantitative Evaluation of Systems*, IEEE Computer Society Press, 2006.

4. B. Adler, L. de Alfaro, L. Dias Da Silva, M. Faella, A. Legay, V. Raman and P. Roy. TICC: A Tool for Interface Compatibility and Composition. In *CAV 06: Proceedings of the 18th International Conference on Computer Aided Verification*, Lecture Notes in Computer Science, Springer-Verlag, 2006.
5. K. Chatterjee, L. de Alfaro, and T.A. Henzinger. The complexity of quantitative concurrent parity games. In *SODA 06: ACM-SIAM Symposium on Discrete Algorithms*, 2006.
6. B. Adler, L. de Alfaro, M. Faella. Average reward timed games. In *FORMATS 05: Proceedings of the 3rd International Conference on Formal Modelling and Analysis of Timed Systems*, Lecture Notes in Computer Science 3829, pages 65–80, Springer-Verlag, 2005.
7. L. de Alfaro, M. Faella, R. Majumdar, and V. Raman. Code-aware resource management. In *EMSOFT 2005: Proceedings of the 5th ACM International Conference on Embedded Software*, pages 191–202, ACM Press, 2005.
8. K. Chatterjee, L. de Alfaro, and T.A. Henzinger. The complexity of stochastic Rabin and Streett games. In *ICALP 05: Proceedings of the 32nd International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science 3580, pages 878–890, Springer-Verlag, 2005.
9. L. de Alfaro, M. Faella, and M. Stoelinga. Linear and branching metrics for quantitative transition systems. In *ICALP 04: Proceedings of the 31st International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science 3142, pages 97–109, Springer-Verlag, 2004.
10. L. de Alfaro, P. Godefroid, and R. Jagadeesan. Three-Valued abstractions of games: Uncertainty, but with Precision. In *LICS 04: Proceedings of the 19th IEEE Symposium on Logic in Computer Science*, pages 170–179, 2004.
11. L. de Alfaro, M. Faella, T.A. Henzinger, R. Majumdar, and M. Stoelinga. Model checking discounted temporal properties. In *TACAS 04: Proceedings of the 10th International Conference on Tools and Algorithms for the Construction and Analysis of Systems*, Lecture Notes in Computer Science 2988, pages 77–92, Springer-Verlag, 2004.
12. A. Chakrabarti, L. de Alfaro, T.A. Henzinger, and M. Stoelinga. Resource interfaces. In *EMSOFT 03: Proceedings of the 3rd International Workshop on Embedded Software*, Lecture Notes in Computer Science 2855, pages 117–133, Springer-Verlag, 2003.
13. L. de Alfaro, M. Faella, T.A. Henzinger, R. Majumdar, and M. Stoelinga. The element of surprise in timed games. In *CONCUR 03: Proceedings of the 14th International Conference*, Lectures Notes in Computer Science 2761, pages 144–158, Springer-Verlag, 2003.
14. L. de Alfaro and M. Faella. Information flow in concurrent games. In *ICALP 03: Proceedings of the 30th International Colloquium on Automata, Languages, and Programming*, Lecture Notes in Computer Science 2719, Springer-Verlag, 2003.
15. L. de Alfaro, T.A. Henzinger, and R. Majumdar. Discounting the future in systems theory. In *ICALP 03: Proceedings of the 30th International Colloquium on Automata, Languages, and Programming*, Lecture Notes in Computer Science 2719, pages 1022–1037, Springer-Verlag, 2003.
16. R. Passerone, L. de Alfaro, T.A. Henzinger, and A.L. Sangiovanni-Vincentelli. Convertibility verification and converter synthesis: Two faces of the same coin. In *ICCAD 02: Proceedings of the International Conference on Computer Aided Design*, pages 132–139, IEEE Computer Society Press, 2002.
17. L. de Alfaro, T.A. Henzinger, and M. Stoelinga. Timed interfaces. In *EMSOFT 02: Proceedings of the Second International Workshop on Embedded Software*, Lecture Notes in Computer Science, pages 108–122, Springer-Verlag, 2002.

18. A. Chakrabarti, L. de Alfaro, T.A. Henzinger, M. Jurdzinski, and F.Y.C. Mang. Interface compatibility checking for software modules. In *CAV 02: Proceedings of the 14th International Conference on Computer Aided Verification*, Lecture Notes in Computer Sciences 2404, pages 428–441, Springer Verlag, 2002.
19. A. Chakrabarti, L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. Synchronous and bidirectional component interfaces. In *CAV 02: Proceedings of the 14th International Conference on Computer Aided Verification*, Lecture Notes in Computer Sciences 2404, pages 414–427, Springer Verlag, 2002.
20. L. de Alfaro and T.A. Henzinger. Interface automata. In *ESEC/FSE 01: Proceedings of the Joint 8th European Software Engineering Conference and 9th ACM SIGSOFT International Symposium on the Foundations of Software Engineering*, pages 109–120, ACM Press, 2001.
21. L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. The control of synchronous systems part II. In *CONCUR 01: Concurrency Theory, Proceedings of the 12th International Conference*, Lectures Notes in Computer Science 2154, pages 566–581, Springer-Verlag, 2001.
22. L. de Alfaro, T.A. Henzinger, and R. Majumdar. Symbolic algorithms for infinite-state games. In *CONCUR 01: Concurrency Theory, Proceedings of the 12th International Conference*, Lectures Notes in Computer Science 2154, pages 536–550, Springer-Verlag, 2001.
23. L. de Alfaro, T.A. Henzinger, and R. Jhala. Compositional methods for probabilistic systems. In *CONCUR 01: Concurrency Theory, Proceedings of the 12th International Conference*, Lectures Notes in Computer Science 2154, pages 351–365, Springer-Verlag, 2001.
24. L. de Alfaro, T.A. Henzinger, and R. Majumdar. From verification to control: Dynamic programs for omega-regular objectives. In *LICS 01: Proceedings of the 16th International IEEE Symposium on Logic in Computer Science*, pages 279–290, 2001.
25. L. de Alfaro and R. Majumdar. Quantitative solution of omega-regular games. In *STOC 01: Proceedings of the 33rd ACM Symposium on Theory of Computing*, pages 675–683, 2001.
26. L. de Alfaro. Model checking the world wide web. In *CAV 01: Proceedings of the 13th Conference on Computer Aided Verification*, Lectures Notes in Computer Science, pages 337–349, Springer-Verlag, 2001.
27. L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. MCWEB: A model-checking tool for web site debugging. Poster presented at *WWW 10: 10th World Wide Web Conference*, Hong Kong, 2001.
28. L. de Alfaro, R. Alur, R. Grosu, T. Henzinger, M. Kang, R. Majumdar, F. Mang, C. Meyer-Kirsch, and B.Y. Wang. Mocha: A model checking tool that exploits design structure. In *ICSE 01: Proceedings of the 23rd International Conference on Software Engineering*, pages 835–836, IEEE Computer Society Press, 2001.
29. L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. The control of synchronous systems. In *CONCUR 00: Concurrency Theory, Proceedings of the 11th International Conference*. Lecture Notes in Computer Science 1877, pages 458–473, Springer-Verlag, 2000.
30. L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. Detecting errors before reaching them. In *CAV 00: Proceedings of the 12th International Conference on Computer Aided Verification*, Lecture Notes in Computer Science 1855, pages 186–201, Springer-Verlag, 2000.
31. L. de Alfaro and T.A. Henzinger. Concurrent omega-regular games. In *LICS 00: Proceedings of the 15th Annual IEEE Symposium on Logic in Computer Science*, pages 141–154, 2000.

32. L. de Alfaro, M. Kwiatkowska, G. Norman, D. Parker and R. Segala. Symbolic model checking of concurrent probabilistic processes using MTBDDs and the Kronecker representation. In *TACAS 00: Proceedings of Tools and Algorithms for the Construction and Analysis of Systems*. Lecture Notes in Computer Science 1785, pages 395–410, Springer-Verlag, 2000.
33. R. Alur, L. de Alfaro, T.A. Henzinger, and F.Y.C. Mang. Automating modular verification. In *CONCUR 99: Concurrency Theory, Proceedings of the 10th International Conference*. Lecture Notes in Computer Science 1664, pages 82–97, Springer-Verlag, 1999.
34. L. de Alfaro. Computing minimum and maximum reachability times in probabilistic systems. In *CONCUR 99: Concurrency Theory, Proceedings of the 10th International Conference*. Lecture Notes in Computer Science 1664, pages 66–81, Springer-Verlag, 1999.
35. L. de Alfaro, T.A. Henzinger, and O. Kupferman. Concurrent reachability games. In *FOCS 98: Proceedings of the 39th Annual IEEE Symposium on Foundations of Computer Science*, pages 564–575, 1998.
36. L. de Alfaro. Stochastic transition systems. In *CONCUR 98: Concurrency Theory, Proceedings of the 9th International Conference*. Lecture Notes in Computer Science 1466, pages 423–438. Springer-Verlag, 1998.
37. L. de Alfaro. How to Specify and verify the long-run average behavior of probabilistic systems. In *LICS 98: Proceedings of the 13th Annual IEEE Symposium on Logic in Computer Science*, pages 454–465, 1998.
38. L. de Alfaro, Z. Manna, H.B. Sipma, and T.E. Uribe. Visual verification of reactive systems. In *TACAS 97: Proceedings of Tools and Algorithms for the Construction and Analysis of Systems*. Lecture Notes in Computer Science 1217, pages 334–350. Springer-Verlag, 1997.
39. L. de Alfaro, A. Kapur, and Z. Manna. Hybrid diagrams: A deductive-algorithmic approach to hybrid system verification. In *STACS 97: Proceedings of the 14th Annual Symposium on Theoretical Aspects of Computer Science*. Lecture Notes in Computer Science 1200, pages 153–164. Springer-Verlag, 1997.
40. L. de Alfaro. Temporal logics for the specification of performance and reliability. In *STACS 97: Proceedings of the 14th Annual Symposium on Theoretical Aspects of Computer Science*. Lecture Notes in Computer Science 1200, pages 165–176. Springer-Verlag, 1997.
41. A. Browne, L. de Alfaro, Z. Manna, H.B. Sipma, and T.E. Uribe. Diagram-based formalisms for the verification of reactive systems. In *Workshop on Visual Reasoning, International Conference on Automated Deduction*, 1996.
42. L. de Alfaro and Z. Manna. Temporal verification by diagram transformations. In *CAV 96: Proceedings of the 8th International Conference on Computer Aided Verification*. Lecture Notes in Computer Science 1102, pages 288–299. Springer-Verlag, 1996.
43. A. Bianco and L. de Alfaro. Model checking of probabilistic and nondeterministic systems. In *FSTTCS 95: Proceedings of the 15th Conference on the Foundations of Software Technology and Theoretical Computer Science*. Lecture Notes in Computer Science 1026, pages 499–513. Springer-Verlag, 1995.
44. L. de Alfaro and Z. Manna. Verification in continuous time by discrete reasoning. In *AMAST 95: Proceedings of Algebraic Methodology and Software Technology, 4th International Conference*. Lecture Notes in Computer Science 936, pages 292–306. Springer-Verlag, 1995.
45. Z. Manna, N. Bjørner, A. Browne, E. Chang, M. Colon, L. de Alfaro, H. Devarajan, H. Sipma, and T. Uribe. STeP: The Stanford temporal prover. In *TAPSOFT 95: Proceedings of Theory and Practice of Software Development*. Lecture Notes in Computer Science 915, pages 793–794. Springer-Verlag, 1995.

46. L. de Alfaro. Determination of automorphic codes. In *Proceedings of the International Conference on Digital Signal Processing*, pages 840–844. North Holland Press, 1987.

Refereed Journal Papers

1. L. de Alfaro, T.A. Henzinger, O. Kupferman. Concurrent Reachability Games. Theoretical Computer Science, Elsevier. To appear.
2. L. de Alfaro, M. Faella, T.A. Henzinger, R. Majumdar, and M. Stoelinga. Model checking discounted temporal properties. Theoretical Computer Science, Elsevier. To appear.
3. L. de Alfaro and R. Majumdar. Quantitative Solution of Omega-Regular Games. *Journal of Computer and Systems Science* **68**, pages 374–397, 2004.
4. L. de Alfaro and M. Stoelinga. Interfaces: a game-theoretic framework to reason about component-based systems. In *Electronic Notes on Theoretical Computer Science* **97**, pages 3–23, Elsevier Science Publishers, 2003.
5. L. de Alfaro and A. Kapur. Hybrid diagrams. *Theoretical Computer Science* **290(1)**, pages 565–597, 2002.
6. L. de Alfaro. From fairness to chance. *Electronic Notes on Theoretical Computer Science* **22**, Elsevier Science Publishers, 2000.
7. L. de Alfaro and A.R. Meo. Codes for second and third order GH-ARQ schemes. *IEEE Transactions on Communication* **42(2–4)**, pages 899–910, 1994.

Invited Papers

1. L. de Alfaro, L. Dias da Silva, M. Faella, A. Legay, P. Roy, M. Sorea. Sociable Interfaces. In *FROCOS 05: Proceedings of Frontiers of Combining Systems, 5th International Workshop*, Lectures Notes in Computer Science 3717, pages 81–105, Springer-Verlag, 2005.
2. L. de Alfaro, and T.A. Henzinger. Interface-Based Design. In *Engineering Theories of Software Intensive Systems*, proceedings of the Marktoberdorf Summer School, Kluwer, 2004.
3. K. Chatterjee, L. de Alfaro, and T.A. Henzinger. Trading memory for randomness. In *QEST 04: Proceedings of the First International Conference on Quantitative Evaluation of Systems*, IEEE Computer Society Press, 2004.
4. L. de Alfaro and M. Stoelinga. Interfaces: A Game-Theoretic Framework to Reason about Open Systems. In *FOCLASA 03: Proceedings of the 2nd International Workshop on Foundations of Coordination Languages and Software Architectures*, 2003.
5. L. de Alfaro. Quantitative Verification and Control via the Mu-Calculus. In *CONCUR 03: Proceedings of the 14th International Conference*, Lectures Notes in Computer Science 2761, pages 103–127, Springer-Verlag, 2003.
6. L. de Alfaro. Game models for open systems. In *Proceedings of the International Symposium on Verification (Theory in Practice)*, Lecture Notes in Computer Science 2772, Springer-Verlag, 2003.
7. L. de Alfaro and T.A. Henzinger. Interface Theories for Component-Based Design. In *EMSOFT 01: Proceedings of the First International Workshop on Embedded Software*, Lecture Notes in Computer Science 2211, pages 148–165, Springer-Verlag, 2001.
8. L. de Alfaro. The verification of probabilistic systems under memoryless partial-information policies is hard. In *PROBMIV 99: Proceedings of Probabilistic Methods in Verification*. Technical Report CSR-99-8, pages 19–32, University of Birmingham, 1999.

LECTURES

Invited Talks at Conferences and Workshops

1. *Interface Theories in Practice*. Invited talk at the Workshop on Games in Design and Verification (GDV 06), Seattle, USA, 2006.
2. *Sociable Interfaces*. Invited talk at the 5th International Workshop on Frontiers of Combining Systems (FROCO 2005), Vienna, Austria, 2005.
3. *Real-time component interfaces*. Invited talk at the Workshop on Games for Logic and Programming Languages, Edinburgh, UK, 2005.
4. *Types for real-time components*. Invited talk at the Third International Symposium on Formal Methods for Components and Objects (FMCO 2004), Leiden, The Netherlands, 2004.
5. *Games as Interfaces for Real-Time Components*. Invited talk, Symposium on Semantic Foundations of Engineering Design Languages (SFEDL), Barcelona, Spain, 2004.
6. *Quantitative verification and control via the mu-calculus*. Invited keynote talk, Concurrency Theory. 14th International Conference (CONCUR), Marseille, France, 2003.
7. *Games as types for component-based design*. Invited talk, 2nd International Workshop on Foundations of Coordination Languages and Software Architectures (FOCLASA), Marseille, France, 2003.
8. *Modeling open systems as games*. Invited talk, International Symposium on Verification (Theory in Practice), Taormina, Italy, 2003.
9. *Behavioral component interfaces*. Invited talk, *Workshop on Component Based Systems: Foundations and Design Methods*, UNU/IIST, Macau, October 28–30, 2002.
10. *Games and mu-calculus*. Invited talk, *Workshop on Mathematical Aspects of Systems*, Montreal, September 30–October 4, 2002, Montreal, Canada.
11. *Interfaces as Games*. Invited talk, *Eighteenth Workshop on the Mathematical Foundations of Programming Semantics*, Tulane University, March 2002.
12. *Algorithmic verification of probabilistic systems*. Keynote speaker, Dagstuhl Seminar on Probabilistic Methods in Verification, May 2000.
13. *Probabilistic issues in the reachability analysis of open systems*. Invited talk, Workshop on Probabilistic Methods in Verification (PROBMIV 98), June 1998.
14. *Abstractions and diagram transformations*. Invited speaker, 6th CSLI Workshop on Logic, Language and Computation, Stanford University, 1997.

Other Lectures

1. *Interfaces as Models of Open Systems*. Invited talk at the University of Naples, Department of Computer Science, Naples, Italy, 2006.
2. *Interfaces: A model for component-based design*. Verimag, Grenoble, France, September 2002.
3. *Concurrent games, fixpoint logics, and quantification*. Berkeley Logic Colloquium, February 16, 2001.
4. *Verification of probabilistic systems*. Dept. of Electrical Engineering, University of Colorado at Boulder, May 1999.
5. *Concurrent reachability games*. Dept. of Computer Science, University of Pisa, Italy, September 1998.

6. *Verifying long-run average properties of probabilistic systems*. State University of New York at Stony Brook, March 1998.
7. *Formal verification of reliability and performance properties of probabilistic systems*. Computer Science Laboratory, SRI International, Menlo Park, CA, USA. May 1997.
8. *Formal verification of system performance and reliability*. Verimag, Grenoble, France. March 1997.
9. *Hybrid diagrams*. Verimag, Grenoble, France. March 1997.
10. *Model-checking reliability and performance properties of untimed and timed systems*. Dept. of Electrical Engineering and Computer Science, University of California, Berkeley, USA. November 1996.
11. *Temporal verification by diagram transformations*. Dept. of Electrical Engineering and Computer Science, University of California, Berkeley, USA. April 1996.

Lectures at Schools

1. *Games in Design and Verification*. Invited doctoral lecture, University of Salerno, Department of Computer Science, Baronissi, Italy, 2006.
2. *Stochastic Games*. Spring School on Infinite Games and Their Applications, Bonn, Germany, March 2005.
3. *Formal methods for component-based design*. Invited lecture, Summer Research Institute, École Polytechnique Federale de Lausanne (EPFL), Switzerland, 2003.
4. *Compositional Verification*. SFM-02:MC, 2nd International School on Formal Methods for the Design of Computer, Communication and Software Systems: Model Checking, 9-14 September 2002, Bertinoro, Italy.
5. *Compositional Verification*. MOVEP 2002, 5th International Summer School on Modelling and Verification of Parallel Processes, June 2002, Nantes, France.

UNIVERSITY ACTIVITY

Instruction

At UC Santa Cruz:

Discrete Mathematics (CMPE 16), undergraduate course, Spring 2004, 2005.

Embedded Software (CMPE 117), upper-division undergraduate course, Springs 2002, 2003, 2006, and Winter 2004, 2005.

Applied Graph Theory (CMPE 177), upper-division undergraduate course, Fall 2005.

Games in Design and Control (CMPE 248), graduate course, Fall 2005.

Software Engineering (CMPE 276), graduate course, Fall 2002.

Introduction to Discrete Systems Theory (CMPE 278), graduate course, Fall 2003 and 2004.

Seminar on Software Engineering (CMPS 280G), Winter 2006.

Introduction to Discrete Systems Theory (CMPE 293), graduate course, Fall 2001.

At UC Berkeley:

Hybrid Systems, instructor, jointly with Tom Henzinger and Karl Johansson, Spring 2000.

Advising

Current postdoctoral supervisor:

1. Marco Faella (UC Santa Cruz, 2002–present).

Former postdoctoral supervisor:

1. Mariëlle Stoelinga (UC Santa Cruz, 2001–2004). Mariëlle Stoelinga is now an Assistant Professor in the Department of Computer Science of the University of Twente, the Netherlands.
2. Maria Sorea (UC Santa Cruz, 2005). Maria Sorea is now a Research Associate at the School of Computer Science of the University of Manchester, UK.

Doctoral students:

1. Bo Adler (2005–present),
2. Vishwananth Raman (2004–present),
3. Pritam Roy (2004–present).

Former graduate students:

1. Ashwini Ananthateerta (MS student, UC Santa Cruz, 2002–2004; thesis: *Early Error Detection*),
2. Vaibhav Bhandari (MS student, UC Santa Cruz, 2002–2004; thesis: *Chai: A Tool for Synchronous Interfaces*)
3. Ashwani Kumar (MS student, UC Santa Cruz, 2002–2004; thesis: *Flexi: A Tool for Interface Automata*)

PhD Thesis Reader: Albert Atserias (UC Santa Cruz, 2002).

PhD Thesis Committee: Jonathan Panttaja (UC Santa Cruz, Santa Cruz, CA, USA, 2006), Anna Lisa Ferrara (University of Salerno, Italy, 2006), Gennaro Parlato (University of Salerno, Italy, 2006), Gennaro Cordasco (University of Salerno, Italy, 2006), Alessandro Ferrante (University of Salerno, Italy, 2006), Ruggero Lanotte (University of Pisa, Italy, 2003).

PhD Qualifying Examiner: Aaron Tomb (UC Santa Cruz, 2006), Elias Sinderson (UC Santa Cruz, 2006), Jonathan Panttaja (UC Santa Cruz, 2002).

Visiting students:

1. Axel Legay (UC Santa Cruz, visiting from University of Liege, Belgium, 2005–present).
2. Marco Faella (UC Santa Cruz, visiting from University of Salerno, Italy, 2001–2002).

Academic Senate Committees

Computing and Telecommunications Committee, Chair, UC Santa Cruz, 2006–present.

Computing and Telecommunications Committee, Member, UC Santa Cruz, 2005–2006.

School of Engineering Committees

Chair, School of Engineering Computer Infrastructure Committee, UC Santa Cruz, 2006–present.

School of Engineering Computer Infrastructure Committee, UC Santa Cruz, Member, 2003–2005.

Departmental Committees

- Graduate Curriculum Committee, 2004–present.
- Computer Engineering Faculty Recruiting Committee, UC Santa Cruz, 2003, 2004.
- Undergraduate Advising Committee, UC Santa Cruz, 2002–present.
- Graduate Admission Committee, UC Santa Cruz, 2002.
- Special Curriculum Committee, 2001, 2003.

PROFESSIONAL ACTIVITIES

Company Boards

1. Co-founder of SSB, Turin, Italy (software development company), and member of the board, 1988–1998.

Conference Steering Committees

1. Workshop on Games in Design and Verification (GDV), 2004.
2. Joint Workshop on Process Algebra and Probabilistic Methods (PAPM-PROBMIV), 2001-2003.
3. International Workshop on Probabilistic Methods in Verification (PROBMIV), 1998–2000.

Conference Organizer and Program Committee Chair

1. 16th International Conference on Concurrency Theory (CONCUR), Santa Cruz, California, USA, 2005.
2. Workshop on Games in Design and Verification (GDV), Boston, USA, 2004.
3. Joint Workshop on Process Algebra and Probabilistic Methods (PAPM-PROBMIV), Aachen, Germany, 2001.

Member of Conference Program Committees

1. 18th International Conference on Concurrency Theory (CONCUR), Lisbon, Portugal, 2007.
2. 10th International Conference on Hybrid Systems: Computation and Control, Italy, 2007.
3. 17th International Conference on Concurrency Theory (CONCUR), Bonn, Germany, 2006.
4. 4th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS), Paris, France, 2006.
5. 9th International Summer School on MOdelling and VERification of Parallel Processes (MOVEP), Bordeaux, France, 2006.
6. 9th International Workshop on Hybrid Systems: Computation and Control (HSCC), Santa Barbara, CA, USA, 2006.
7. Foundations of Software Science and Computation Structures (FOSSACS), 2006.
8. 4th International Conference on Embedded Software (EMSOFT), Jersey City, NJ, USA, 2005.
9. 3rd Workshop on Quantitative Aspects of Programming Languages (QAPL), Edinburgh, Scotland, 2005.
10. Workshop on Foundations of Interactive Computation (FINCO), Edinburgh, Scotland, 2005.

11. International Symposium on Component-Based Software Engineering (CBSE), 2005.
12. 20th Annual IEEE Symposium on Logic in Computer Science (LICS), 2005.
13. Second International Workshop on Web Based Systems and Applications (WEBSA), Hong Kong, 2004.
14. 1st International Conference on Quantitative Evaluation of Systems (QEST), Twente, Enschede, the Netherlands, 2004.
15. Workshop on Testing, Analysis and Verification of Web Services (TAV-WEB), Boston, Massachusetts, USA, 2004.
16. 15th International Conference on Concurrency Theory (CONCUR), London, United Kingdom, 2004.
17. 3rd International Conference on Embedded Software (EMSOFT), Pisa, Italy, 2004.
18. 7th International Summer School on Modelling and Verification of Parallel Processes (MOVEP), Nantes, France, 2004.
19. 2nd International Workshop on Formal Modeling and Analysis of Timed Systems, and 9th International Symposium on Formal Techniques in Real-Time and Fault Tolerant Systems (FORMATS + FTRTFT), Grenoble, France, 2004.
20. 16th International Conference on Computer-Aided Verification (CAV), Boston, Massachusetts, USA, 2004.
21. 2nd Workshop on Quantitative Aspects of Programming Languages (QAPL), Barcelona, Spain, 2004.
22. Workshop on the Specification and Verification of Component-Based Systems (SAVCBS), Helsinki, Finland, 2003.
23. International Conference on Tools and Algorithms For The Construction and Analysis of Systems (TACAS), Warsaw, Poland, 2003.
24. Joint Workshop on Process Algebra and Probabilistic Methods (PAPM-PROBMIV), Copenhagen, Denmark, 2002.
25. IFIP WG10.5 Advanced Research Working Conference on Correct Hardware Design and Verification Methods (CHARME), Livingston, Scotland, 2001.
26. 8th International Workshop on Process Algebra and Performance Modelling (PAPM), Geneva, Switzerland, 2000.
27. 2nd International Workshop on Probabilistic Methods in Verification (PROBMIV), Eindhoven, the Netherlands, 1999.

Journal Referee

1. Acta Informatica
2. Distributed Computing
3. IEEE Transactions on Software Engineering
4. Information and Computation
5. International Journal of Parallel Programming
6. Journal of Artificial Intelligence Research
7. Journal of the ACM
8. Journal of Theoretical Computer Science

Conference Referee

1. International Conference on Tools and Algorithms For The Construction and Analysis of Systems (TACAS), 2004.
2. 31st ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL), 2004.
3. Third International Workshop on Embedded Software (EMSOFT), 2003.
4. Concurrency Theory, 14th International Conference (CONCUR), 2003.
5. 10th International SPIN Workshop on Model Checking of Software, 2003.
6. 18th Annual IEEE Symposium on Logic in Computer Science (LICS), 2003.
7. Workshop on Process Algebras and Probabilistic Methods (PAPM), 2002.
8. Twenty-first ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS), 2002.
9. 13th Conference on Computer-Aided Verification (CAV), 2001.
10. 16th IEEE Symposium on Logic in Computer Science (LICS), 2001.
11. 8th International Workshop on Process Algebra and Performance Modelling (PAPM), 2000.
12. Concurrency Theory, 11th International Conference (CONCUR), 2000.
13. 12th Conference on Computer Aided Verification (CAV), 2000.
14. Foundations of Software Science and Computation Structures (FOSSACS), 2000.
15. International Conference on Algebraic Methodology and Software Technology (AMAST), 1999.
16. Hybrid Systems Symposium (HSS), 1999.
17. 26th ACM SIGPLAN-SIGACT Symposium on Principles of Programming Languages (POPL), 1999.
18. Concurrency Theory, 10th International Conference (CONCUR), 1999.
19. Second International Workshop on Probabilistic Methods in Verification (ProbMIV), 1999.
20. First International Workshop on Probabilistic Methods in Verification (ProbMIV), 1998.
21. 37th IEEE Conference on Decision and Control (DAC), 1998.
22. Second International Conference on Formal Methods in Computer-aided Design (FMCAD), 1998.
23. 19th IEEE Real-Time Systems Symposium (RTSS), 1998.
24. 13th IEEE Symposium on Logic in Computer Science (LICS), 1998.

Other Refereeing

1. National Science Foundation
2. University of California Microelectronics Innovation and Computer Research Opportunities
3. Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO)

Consulting Activities

1. Napster, Redwood City, California, 2001–2002.
2. Gigabeat, Palo Alto, California, 2000–2001.
3. Olivetti Spa, Ivrea, Italy, 1985–88.
4. Polypren, Italy, 1985–87.

RESEARCH GRANTS

10/1/2005–9/30/2006	<i>Timed Interfaces for Real-Time Software</i> (PI) University Affiliated Research Center Aligned Research Program	US\$ 23,798
3/23/2005	<i>Gift, Microsoft Research</i>	US\$ 3,000
1/1/2005–12/31/2006	<i>Supplement to CAREER Award: Structured Design of Embedded Software</i> (PI) National Science Foundation Award CCR-0132780	US\$ 200,000
12/1/2004–09/31/2005	<i>Timed Interfaces for Real-Time Software</i> (PI) University Affiliated Research Center Aligned Research Program Task	US\$ 24,329
1/1/2004–12/31/2006	<i>Interfaces and Model Checking for Software</i> (PI) NASA Ames Research Center	US\$ 240,000
9/1/2002–8/31/2006	<i>Interfaces and Model Checking for Software</i> (PI) National Science Foundation	US\$ 400,000
5/21/2002–4/30/2005	<i>Rich Interfaces for Component-Based Design</i> Office of Naval Research, PI of subcontract to Grant N00014-02-1-0671 (University of California, Berkeley)	US\$ 600,000
1/1/2002–12/31/2006	<i>Structured Design of Embedded Software</i> (PI) National Science Foundation CAREER Award Grant CCR-0132780	US\$ 430,030