

# Carlo A. Furia

Chair of Software Engineering  
Department of Computer Science, ETH Zurich  
ETH Zentrum RZ J4, Clausiusstrasse 59  
8092 Zürich, Switzerland

Phone: +41 4463 24470  
Email: [carlo.furia@inf.ethz.ch](mailto:carlo.furia@inf.ethz.ch)  
Homepage: <http://se.inf.ethz.ch/people/furia/>

## Current position

Post-doctoral researcher at the Chair of Software Engineering, Department of Computer Science, ETH Zurich, Switzerland.

## Personal data

**Place and date of birth:** Varese, Italy. 16 September 1979.

**Nationality:** Italian.

## Research positions

**February 2009–present:** Post-doctoral researcher at the Chair of Software Engineering, Department of Computer Science, ETH Zürich (Switzerland).

**November 2008–January 2009:** Post-doctoral researcher at CNR IEIT-MI (Milano, Italy).

**June 2007–September 2008:** Post-doctoral researcher at Deep-SE Group, Dipartimento di Elettrotecnica e Informazione, Politecnico di Milano (Milano, Italy).

**September–November 2006:** Visiting scholar at the Computer Science Department, University of Virginia (Charlottesville, VA, USA). Host: Prof. John C. Knight.

## Education

**Ph.D. in computer science**, 2004–2007.

*Politecnico di Milano* (Milano, Italy).

Graduated on 3 May 2007; advisor: Prof. Dino Mandrioli

**Laurea degree**<sup>1</sup> in “Ingegneria Informatica” (Computer Science Engineering), 1998–2003.

*Politecnico di Milano* (Milano, Italy).

Graduated on 19 December 2003; grade 100/100 *cum laude*, GPA: 29.45/30.00.

Thesis advisor: Prof. Dino Mandrioli.

**Master of science in computer science**, 2002–2003.

*University of Illinois at Chicago* (Chicago, IL, USA).

Graduated on 14 December 2003; GPA 5.0/5.0.

Thesis advisors: Prof. Ugo Buy and Prof. Dino Mandrioli.

---

<sup>1</sup>MS equivalent.

## Research interests

### **Formal methods for software engineering.**

My main research interests focus on the development of models, techniques, methods, and tools to support the analysis, rigorous development, and verification of software and software-intensive systems. The main topics include:

*Logic for the specification and analysis of software.*

*Formal proofs of program correctness.*

*Testing and dynamic analysis.*

*Real-time modeling and verification.*

*Integration of formal methods.*

## Publications<sup>2</sup>

### *Research papers*

- P32. Yi Wei, Hannes Roth, Carlo A. Furia, Yu Pei, Alexander Horton, Michael Steindorfer, Martin Nordio, and Bertrand Meyer. Stateful testing: Finding more errors in code and contracts. In Perry Alexander, Corina Pasareanu, and John Hosking, editors, *Proceedings of the 26th IEEE/ACM International Conference on Automated Software Engineering (ASE'11)*, pages 440–443. ACM, November 2011. (Acceptance rate: 43%)

Extended version in [R28].

- P31. Yu Pei, Yi Wei, Carlo A. Furia, Martin Nordio, and Bertrand Meyer. Code-based automated program fixing. In Perry Alexander, Corina Pasareanu, and John Hosking, editors, *Proceedings of the 26th IEEE/ACM International Conference on Automated Software Engineering (ASE'11)*, pages 392–395. ACM, November 2011. (Acceptance rate: 43%)

Extended version in [R25].

- P30. Julian Tschannen, Carlo A. Furia, Martin Nordio, and Bertrand Meyer. Usable verification of object-oriented programs by combining static and dynamic techniques. In Gilles Barthe, Alberto Pardo, and Gerardo Schneider, editors, *9th International Conference on Software Engineering and Formal Methods (SEFM'11)*, volume 7041 of *Lecture Notes in Computer Science*, pages 382–398. Springer, November 2011. (Acceptance rate: 28%)

- P29. Carlo A. Furia and Paola Spoletini. On relaxing metric information in linear temporal logic. In Carlo Combi, Martin Leucker, and Frank Wolter, editors, *Proceedings of the 18th International Symposium on Temporal Representation and Reasoning (TIME'11)*, pages 72–79. IEEE Computer Society, September 2011. (Acceptance rate: 44%)

Extended version in [R16].

- P28. Marco Trudel, Manuel Oriol, Carlo A. Furia, and Martin Nordio. Automated translation of Java source code to Eiffel. In Judith Bishop and Antonio Vallecillo, editors, *Objects, Components, Models, Patterns. 49th International Conference, TOOLS Europe 2011*, volume 6705 of *Lecture Notes in Computer Science*, pages 20–35. Springer, June 2011. (Acceptance rate: 28%)

---

<sup>2</sup>Publications are available online at <http://se.inf.ethz.ch/people/furia/>.

- P27. Yi Wei, Carlo A. Furia, Nikolay Kazmin, and Bertrand Meyer. Inferring better contracts. In Richard N. Taylor, Harald Gall, and Nenad Medvidović, editors, *Proceedings of the 33rd International Conference on Software Engineering (ICSE'11)*, pages 191–200. ACM, May 2011. (Acceptance rate: 14%)
- P26. Carlo A. Furia and Matteo Rossi. A theory of sampling for continuous-time metric temporal logic. *ACM Transactions on Computational Logic*, 12(1):1–40, October 2010. Article 8  
Previous version in [R19].
- P25. Carlo A. Furia and Bertrand Meyer. Inferring loop invariants using postconditions. In Andreas Blass, Nachum Dershowitz, and Wolfgang Reisig, editors, *Fields of Logic and Computation: Essays Dedicated to Yuri Gurevich on the Occasion of His 70th Birthday*, volume 6300 of *Lecture Notes in Computer Science*, pages 277–300. Springer, August 2010  
Previous version in [R18].
- P24. Carlo A. Furia. What's decidable about sequences? In Ahmed Bouajjani and Wei-Ngan Chin, editors, *Proceedings of the 8th International Symposium on Automated Technology for Verification and Analysis (ATVA'10)*, volume 6252 of *Lecture Notes in Computer Science*, pages 128–142. Springer, September 2010. (Acceptance rate: 41%)  
Extended version in [R20].
- P23. Dino Mandrioli, Stephen Fickas, Carlo A. Furia, Mehdi Jazayeri, Matteo Rossi, and Michal Young. SCORE: the first student contest on software engineering. *SIGSOFT Software Engineering Notes*, 35(4):24–30, July 2010
- P22. Nadia Polikarpova, Carlo A. Furia, and Bertrand Meyer. Specifying reusable components. In Gary T. Leavens, Peter O'Hearn, and Sriram Rajamani, editors, *Proceedings of the 3rd International Conference on Verified Software: Theories, Tools, and Experiments (VSTTE'10)*, volume 6217 of *Lecture Notes in Computer Science*, pages 127–141. Springer, August 2010. (Acceptance rate: 36%)  
Extended version in [R22].
- P21. Yi Wei, Yu Pei, Carlo A. Furia, Lucas S. Silva, Stefan Buchholz, Bertrand Meyer, and Andreas Zeller. Automated fixing of programs with contracts. In Paolo Tonella and Alessandro Orso, editors, *Proceedings of the 19th International Symposium on Software Testing and Analysis (ISSTA'10)*, pages 61–72. ACM, July 2010. (Acceptance rate: 23%)
- P20. Carlo A. Furia, Dino Mandrioli, Angelo Morzenti, and Matteo Rossi. Modeling time in computing: a taxonomy and a comparative survey. *ACM Computing Surveys*, 42(2):1–59, February 2010. Article 6  
Also available as [R15].
- P19. Luca Cavallaro, Elisabetta Di Nitto, Carlo A. Furia, and Matteo Pradella. A tile-based approach for self-assembling service compositions. In *Proceedings of the 15th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS'10)*, pages 43–52. IEEE, March 2010. (Acceptance rate: 23%)
- P18. Silvia Bindelli, Elisabetta Di Nitto, Carlo A. Furia, and Matteo Rossi. Using compositionality to formally model and analyze systems built of a high number of components. In *Proceedings of the 15th IEEE International Conference on Engineering of Complex Computer Systems (ICECCS'10)*, pages 85–94. IEEE, March 2010. (Acceptance rate: 23%)

- P17. Marcello M. Bersani, Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Integrated modeling and verification of real-time systems through multiple paradigms. In *Proceedings of the 7th IEEE International Conference on Software Engineering and Formal Methods (SEFM'09)*, pages 13–22. IEEE Computer Society Press, November 2009. (Acceptance rate: 35%)
- Extended version in [R17].
- P16. Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Comments on “Temporal logics for real-time system specification”. *ACM Computing Surveys*, 41(2):1–5, February 2009. Extended version as Technical Report 2008.7, Dipartimento di Elettronica e Informazione, Politecnico di Milano, April 2008
- P15. Carlo A. Furia and Paola Spoletini. Practical efficient modular linear-time model-checking. In Sungdeok (Steve) Cha, Jin-Young Choi, Monzoo Kim, Insup Lee, and Mahesh Viswanathan, editors, *Proceedings of the 6th International Symposium on Automated Technology for Verification and Analysis (ATVA'08)*, volume 5311 of *Lecture Notes in Computer Science*, pages 408–417. Springer-Verlag, October 2008. (Acceptance rate: 34%)
- P14. Carlo A. Furia and Matteo Rossi. MTL with bounded variability: Decidability and complexity. In Franck Cassez and Claude Jard, editors, *Proceedings of the 6th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'08)*, volume 5215 of *Lecture Notes in Computer Science*, pages 109–123. Springer-Verlag, September 2008. (Acceptance rate: 45%)
- Extended version in [R14].
- P13. Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Practical automated partial verification of multi-paradigm real-time models. In Shaoying Liu, Tom Maibaum, and Keijiro Araki, editors, *Proceedings of the 10th International Conference on Formal Engineering Methods (ICFEM'08)*, volume 5256 of *Lecture Notes in Computer Science*, pages 298–317. Springer-Verlag, October 2008. (Acceptance rate: 32%)
- Extended version in [R13].
- P12. Carlo A. Furia and Paola Spoletini. Tomorrow and all our yesterdays: MTL satisfiability over the integers. In John S. Fitzgerald, Anne E. Haxthausen, and Husnu Yenigun, editors, *Proceedings of the 5th International Colloquium on Theoretical Aspects of Computing (ICTAC'08)*, volume 5160 of *Lecture Notes in Computer Science*, pages 126–140. Springer-Verlag, September 2008. (Acceptance rate: 38%)
- Extended version in [R12].
- P11. Carlo A. Furia, Marco Mazzucchelli, Paola Spoletini, and Mara Tanelli. Towards the exhaustive verification of real-time aspects in controller implementation. In *Proceedings of the 9th IEEE International Symposium on Computer-Aided Control System Design (CACSD'08)*, pages 1265–1270. IEEE Press, September 2008. CACSD'08 is part of the 2nd IEEE Multi-conference on Systems and Control
- Extended version in [R11].
- P10. Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Automated verification of dense-time MTL specifications via discrete-time approximation. In Jorge Cuéllar, Tom Maibaum, and Kaisa Sere, editors, *Proceedings of the 15th International Symposium on Formal Methods (FM'08)*, volume 5014 of *Lecture Notes in Computer Science*, pages 132–147. Springer-Verlag, May 2008. (Acceptance rate: 21%)
- Extended version in [R9].

- P9. Carlo A. Furia and Matteo Rossi. On the expressiveness of MTL variants over dense time. In Jean-François Raskin and P. S. Thiagarajan, editors, *Proceedings of the 5th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'07)*, volume 4763 of *Lecture Notes in Computer Science*, pages 163–178. Springer-Verlag, October 2007. (Acceptance rate: 45%)
- Extended version in [R10].
- P8. Carlo A. Furia and Matteo Rossi. No need to be strict: on the expressiveness of metric temporal logics with (non-)strict operators. *Bulletin of the European Association for Theoretical Computer Science*, 92:150–160, June 2007
- P7. Carlo A. Furia, Matteo Rossi, Dino Mandrioli, and Angelo Morzenti. Automated compositional proofs for real-time systems. *Theoretical Computer Science*, 376(3):164–184, 2007
- Extended version of [P3].
- Special issue with invited papers from FASE 2004 and 2005.
- P6. Carlo A. Furia, Matteo Rossi, and Dino Mandrioli. Modeling the environment in software-intensive systems. In *Proceedings of the Workshop on Modeling in Software Engineering (MISE'07)*, May 2007. A Workshop of the 29th International Conference on Software Engineering (ICSE'07), (Acceptance rate: 43%)
- P5. Carlo A. Furia, Angelo Morzenti, Matteo Pradella, and Matteo G. Rossi. Comments on “A temporal logic for real-time system specification”. *IEEE Transactions on Software Engineering*, 32(6):424–427, June 2006. Comments paper
- P4. Carlo A. Furia and Matteo Rossi. Integrating discrete- and continuous-time metric temporal logics through sampling. In Eugene Asarin and Patricia Bouyer, editors, *Proceedings of the 4th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'06)*, volume 4202 of *Lecture Notes in Computer Science*, pages 215–229. Springer-Verlag, September 2006. (Acceptance rate: 44%)
- Extended version in [R3].
- P3. Carlo A. Furia, Matteo Rossi, Dino Mandrioli, and Angelo Morzenti. Automated compositional proofs for real-time systems. In Maura Cerioli, editor, *Proceedings of the 8th International Conference on Fundamental Approaches to Software Engineering (FASE'05)*, volume 3442 of *Lecture Notes in Computer Science*, pages 326–340. Springer-Verlag, March 2005. Conference held as part of the Joint European Conferences on Theory and Practice of Software (ETAPS'05), (Acceptance rate: 22%)
- Journal version in [P7].
- P2. Andrea Matta, Carlo A. Furia, and Matteo Rossi. Semi-formal and formal models applied to flexible manufacturing systems. In Cevdet Aykanat, Tuğrul Dayar, and İbrahim Körpeoğlu, editors, *Proceedings of the 19th International Symposium on Computer and Information Sciences (ISCIS'04)*, volume 3280 of *Lecture Notes in Computer Science*, pages 718–728. Springer-Verlag, October 2004. (Acceptance rate: 29%)
- P1. Carlo A. Furia and Matteo Rossi. A compositional framework for formally verifying modular systems. In *Proceedings of the International Workshop on Test and Analysis of Component Based Systems (TACoS'04)*, volume 116 of *Electronic Notes in Theoretical Computer Science*, pages 185–198. Elsevier, January 2004

*Theses*

- T3. Carlo Alberto Furia. *Scaling Up the Formal Analysis of Real-Time Systems*. PhD thesis, Dipartimento di Elettronica e Informazione, Politecnico di Milano, May 2007
- T2. Carlo Alberto Furia. Compositional proofs for real-time modular systems. Master's thesis, Politecnico di Milano, December 2003. (Tesi di Laurea)
- T1. Carlo Alberto Furia. Compositional proofs for real-time modular systems. Master's thesis, University of Illinois at Chicago, October 2003

*Technical reports and reviews*

- R30. Carlo A. Furia. A survey of multi-tape automata. <http://arxiv.org/abs/1205.0178>, May 2012
- R29. Martin Nordio, H.-Christian Estler, Carlo A. Furia, and Bertrand Meyer. Collaborative software development on the web. <http://arxiv.org/abs/1105.0768>, September 2011
- R28. Yi Wei, Hannes Roth, Carlo A. Furia, Yu Pei, Alexander Horton, Michael Steindorfer, Martin Nordio, and Bertrand Meyer. Stateful testing: Finding more errors in code and contracts. <http://arxiv.org/abs/1108.1068>, August 2011
- R27. Julian Tschannen, Carlo A. Furia, Martin Nordio, and Bertrand Meyer. Verifying Eiffel programs with Boogie. <http://arxiv.org/abs/1106.4700>, June 2011  

This work has been presented at the First International Workshop on Intermediate Verification Languages (Boogie'11), held in Wrocław, Poland, on 1 August 2011.
- R26. Carlo A. Furia. QFIS – a verifier for the theory of quantifier-free integer sequences. User manual, v. 1.0, 2011–2012
- R25. Yu Pei, Yi Wei, Carlo A. Furia, Martin Nordio, and Bertrand Meyer. Code-based automated program fixing. <http://arxiv.org/abs/1102.1059>, February 2011. Revised in August 2011
- R24. Carlo A. Furia. Review of *The Calculus of Computation* by A. R. Bradley and Z. Manna. *ACM SIGACT News*, 42(1):32–35, March 2011
- R23. Carlo A. Furia, Alberto Leva, Martina Maggio, and Paola Spoletini. A control-theoretical methodology for the scheduling problem. <http://arxiv.org/abs/1009.3455>, September 2010
- R22. Nadia Polikarpova, Carlo A. Furia, and Bertrand Meyer. Specifying reusable components. <http://arxiv.org/abs/1003.5777>, March 2010
- R21. Paul Z. Kolano, Carlo A. Furia, Richard A. Kemmerer, and Dino Mandrioli. Refinement and verification of real-time systems. <http://arxiv.org/abs/1002.1796>, February 2010
- R20. Carlo A. Furia. What's decidable about sequences? <http://arxiv.org/abs/1001.2100>, January 2010
- R19. Carlo A. Furia and Matteo Rossi. A theory of sampling for continuous-time Metric Temporal Logic. <http://arxiv.org/abs/0911.5642>, November 2009
- R18. Carlo A. Furia and Bertrand Meyer. Inferring loop invariants using postconditions. <http://arxiv.org/abs/0909.0884>, September 2009

- R17. Marcello M. Bersani, Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Integrated modeling and verification of real-time systems through multiple paradigms. <http://arxiv.org/abs/0907.5074>, July 2009
- R16. Carlo A. Furia and Paola Spoletini. On relaxing metric information in linear temporal logic. <http://arxiv.org/abs/0906.4711>, June 2009. Last revised in June 2011
- A preliminary version of this work has been presented at the 11th Italian Conference on Theoretical Computer Science (ICTCS'09), held in Cremona, Italy, on 28–30 September 2009.
- R15. Carlo A. Furia, Dino Mandrioli, Angelo Morzenti, and Matteo Rossi. Modeling time in computing: a taxonomy and a comparative survey. <http://arxiv.org/abs/0807.4132>, July 2008. (A preliminary version appeared as Technical Report 2007.22, Dipartimento di Elettronica e Informazione, Politecnico di Milano, January 2007)
- R14. Carlo A. Furia and Matteo Rossi. MTL with bounded variability: Decidability and complexity. Technical Report 2008.10, Dipartimento di Elettronica e Informazione, Politecnico di Milano, May 2008
- R13. Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Practical automated partial verification of multi-paradigm real-time models. <http://arxiv.org/abs/0804.4383>, April 2008
- R12. Carlo A. Furia and Paola Spoletini. MTL satisfiability over the integers. Technical Report 2008.2, Dipartimento di Elettronica e Informazione, Politecnico di Milano, February 2008
- R11. Carlo A. Furia, Marco Mazzucchelli, Paola Spoletini, and Mara Tanelli. Towards the exhaustive verification of real-time aspects in controller implementation. Technical Report 2008.1, Dipartimento di Elettronica e Informazione, Politecnico di Milano, January 2008
- R10. Carlo A. Furia and Matteo Rossi. On the expressiveness of MTL variants over dense time. Technical Report 2007.41, Dipartimento di Elettronica e Informazione, Politecnico di Milano, May 2007
- R9. Carlo A. Furia, Matteo Pradella, and Matteo Rossi. Dense-time MTL verification through sampling. Technical Report 2007.37, Dipartimento di Elettronica e Informazione, Politecnico di Milano, April 2007
- R8. Carlo Alberto Furia. Discrete meets continuous, again. Technical Report 2006.77, Dipartimento di Elettronica e Informazione, Politecnico di Milano, December 2006
- R7. Carlo Alberto Furia. Compositionality made up. Technical Report 2006.76, Dipartimento di Elettronica e Informazione, Politecnico di Milano, December 2006
- R6. Carlo A. Furia, Matteo Rossi, Elisabeth A. Strunk, Dino Mandrioli, and John C. Knight. Raising formal methods to the requirements level. Technical Report 2006.64, Dipartimento di Elettronica e Informazione, Politecnico di Milano, November 2006. Also: Technical Report CS-2006-24, Department of Computer Science, University of Virginia
- R5. Elisabeth A. Strunk, Carlo A. Furia, Matteo Rossi, John C. Knight, and Dino Mandrioli. The engineering roles of requirements and specification. Technical Report CS-2006-21, Department of Computer Science, University of Virginia, October 2006. Also: Technical Report 2006.61, Dipartimento di Elettronica e Informazione, Politecnico di Milano
- R4. Carlo Alberto Furia. Quantum informatics: A survey. Technical Report 2006.16, Dipartimento di Elettronica e Informazione, Politecnico di Milano, January 2006

- R3. Carlo A. Furia and Matteo Rossi. When discrete met continuous: on the integration of discrete- and continuous-time metric temporal logics. Technical Report 2005.44, Dipartimento di Elettronica e Informazione, Politecnico di Milano, October 2005
- R2. Carlo Alberto Furia. A compositional world: a survey of recent works on compositionality in formal methods. Technical Report 2005.22, Dipartimento di Elettronica e Informazione, Politecnico di Milano, March 2005
- R1. Carlo A. Furia, Dino Mandrioli, Angelo Morzenti, Matteo Pradella, Matteo Rossi, and Pierluigi San Pietro. Higher-order TRIO. Technical Report 2004.28, Dipartimento di Elettronica e Informazione, Politecnico di Milano, September 2004

## Teaching activities

Lecturer for the compact industry course “Software testing and verification”, ETH Zürich, 1 April 2011, 18 November 2011. With Prof. Bertrand Meyer and Dr. Sebastian Nanz.

Lecturer for the course “Software architecture”, ETH Zürich, Spring 2011. In collaboration with Prof. Bertrand Meyer and Dr. Martin Nordio.

Lecturer for the course “Java and C# in depth”, ETH Zürich, Spring 2010. In collaboration with Prof. Bertrand Meyer.

Lecturer for the graduate course “Software verification”, ETH Zürich, Fall 2009, 2010, 2011. In collaboration with Prof. Bertrand Meyer and Dr. Sebastian Nanz.

Guest lecturer for the course “Eiffel: Analysis, Design and Programming”, ETH Zürich, Fall 2009. In collaboration with other members of the Chair of Software Engineering of ETH Zürich.

Teaching assistant for the graduate course “Software engineering seminar”, ETH Zürich, Spring 2009, 2010, Prof. Bertrand Meyer.

Teaching assistant for “Informatica (CIV)”, undergraduate course on fundamentals of computer science, Politecnico di Milano, Fall 2008, Dr. Matteo Rossi.

Teaching assistant for “Informatica Teorica”, advanced undergraduate course on the theory of computation, Politecnico di Milano, Spring 2008, Prof. Dino Mandrioli.

Teaching assistant for “Informatica A”, undergraduate course on fundamentals of computer science, Politecnico di Milano, Fall 2007, Dr. Matteo Rossi.

Teaching assistant for the advanced undergraduate course “Theoretical Computer Science” (in English), Politecnico di Milano, Spring 2007, 2008, Prof. Angelo Morzenti.

Teaching assistant for “Informatica Teorica”, advanced undergraduate course on the theory of computation, Politecnico di Milano, Spring 2007, Dr. Matteo Pradella.

Teaching assistant for “Informatica B”, undergraduate course on fundamentals of computer science, Politecnico di Milano, Fall 2005, Dr. Paola Spoletini.

Teaching assistant for the graduate course “Formal Methods in Concurrent and Distributed Systems” (in English), Politecnico di Milano/University of Illinois at Chicago, Spring 2004, 2005, 2006, 2007, 2008, Prof. Dino Mandrioli.

Teaching assistant for “Informatica Teorica”, advanced undergraduate course on the theory of computation, Politecnico di Milano, Spring 2004, 2005, 2006, Dr. Matteo Rossi.

## Supervised theses and projects

Matteo Carini and Nicholas Fiorentini. Implementazione di un algoritmo ad elevata complessità per la verifica di sistemi real-time a tempo denso (in Italian). Bachelor's Thesis, Politecnico di Milano, September 2009.

Antonio D'Ettole. Uso e comparazione di dimostratori di teoremi per la verifica di specifiche in logica temporale (in Italian). Bachelor's Thesis, Politecnico di Milano, March 2007.

Francesco Leone. Specifica e analisi di un Flexible Manufacturing System (in Italian). Bachelor's Thesis, Politecnico di Milano, March 2005.

## Conferences and schools

18th International Symposium on Temporal Representation and Reasoning (TIME'11). 12–14 September 2011, Lübeck, Germany.

8th LASER Summer School on Software Engineering: "Tools for Practical Software Verification". 4–10 September 2011, Elba Island, Italy.

33rd International Conference on Software Engineering (ICSE'11). 21–28 May 2011, Honolulu, HI, USA.

Eiffel at 25. 24 November 2010, Zürich, Switzerland.

The Future of Software Engineering Symposium (FOSE). 22–23 November 2010, Zürich, Switzerland.

8th International Symposium on Automated Technology for Verification and Analysis (ATVA'10). 21–24 September 2010, Singapore.

7th LASER Summer School on Software Engineering: "Empirical Software Engineering". 5–11 September 2010, Elba Island, Italy.

15th International Conference on Engineering of Complex Computer Systems. 22–26 March 2010, Oxford, UK.

SEMAT (Software Engineering Method and Theory) kickoff workshop. 17–18 March 2010, Zürich, Switzerland.

IFIP WG 2.3 meeting 50. 1–5 March 2010, Lachen, Switzerland.

11th Italian Conference on Theoretical Computer Science. 28–30 September 2009, Cremona, Italy.

47th International Conference on Objects, Models, Components, Patterns. 29 June–3 July 2009, Zürich, Switzerland.

31st International Conference on Software Engineering (ICSE'09). 16–24 May 2009, Vancouver, Canada.

10th International Conference on Formal Engineering Methods (ICFEM'08). 27–31 October 2008. Kitakyushu, Japan.

6th International Symposium on Automated Technology for Verification and Analysis (ATVA'08). 20–23 October 2008, Seoul, South Korea.

Developments and New Tracks in Trace Theory (DN'TTT'08). 9–11 October 2008, Cremona, Italy.

6th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'08). 15–17 September 2008, Saint-Malo, France.

5th International Colloquium on Theoretical Aspects of Computing (ICTAC'08). 1–3 September 2008, Istanbul, Turkey.

15th International Symposium on Formal Methods (FM'08). 26–30 May 2008, Turku (Åbo), Finland.

5th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'07). 3–5 October 2007, Salzburg, Austria.

29th International Conference on Software Engineering (ICSE'07). 19–17 May 2007, Minneapolis, MN, USA.

4th International Conference on Formal Modelling and Analysis of Timed Systems (FORMATS'06). 25–27 September 2006, Paris, France.

17th International School for Computer Science Researchers on Formal Methods: Theory and Practice. 10–23 July 2005, Lipari Island, Italy.

8th International Conference on Fundamental Approaches to Software Engineering (FASE'05). 2–10 April 2005, Edinburgh, Scotland, UK.

19th International Symposium on Computer and Information Sciences (ISCIS'04). 27–29 October 2004, Kemer–Antalya, Turkey.

4th Canadian Summer School on Quantum Information. 21–25 June 2004, University of Waterloo, Waterloo, Canada.

## Research talks

On Relaxing Metric Information in Linear Temporal Logic. TIME'11, 13 September 2011. Lübeck, Germany.

Contracts for Verification – a personal perspective. Eiffel at 25, 24 November 2010. Zürich, Switzerland.

What's Decidable about Sequences? ATVA'10, 22 September 2010. Singapore.

Using Compositionality to Formally Model and Analyze Systems Built of a High Number of Components. ICECCS'10, 25 March 2010. Oxford, UK.

Towards Relaxing Metric Information in Linear Temporal Logic. ICTCS'09, 29 September 2009. Cremona, Italy.

Practical Automated Partial Verification of Multi-Paradigm Real-Time Models. ICFEM'08, 30 October 2008. Kitakyushu, Japan.

Practical Efficient Modular Linear-Time Model-Checking. ATVA'08, 22 October 2008. Seoul, South Korea.

MTL with Bounded Variability: Decidability and Complexity. FORMATS'08, 15 September 2008, Saint-Malo, France.

Tomorrow and All Our Yesterdays: MTL Satisfiability over the Integers. ICTAC'08, 2 September 2008, Istanbul, Turkey.

Automated Verification of Dense-Time MTL Specifications via Discrete-Time Approximations. FM'08, 28 May 2008, Turku (Åbo), Finland.

On the Expressiveness of MTL Variants. FORMATS'07, 4 October 2007, Salzburg, Austria.

Integrating Discrete- and Continuous-Time Metric Temporal Logics Through Sampling: Framework and Applications. EPFL, 25 June 2007, Lausanne, Switzerland. (Host: Prof. Thomas A. Henzinger)

Modeling the Environment in Software-Intensive Systems. MiSE@ICSE'07, 20 May 2007, Minneapolis, MN, USA.

Integrating Discrete- and Continuous-Time Metric Temporal Logics Through Sampling. FORMATS'06, 25 September 2006, Paris, France.

Compositionality and Integration for Real-Time Systems. EPFL, 20 October 2005, Lausanne, Switzerland. (Host: Prof. Thomas A. Henzinger)

Automated Compositional Proofs for Real-Time Systems. FASE'05, 8 April 2005, Edinburgh, UK.

Semi-Formal and Formal Models Applied to Flexible Manufacturing Systems. ISCIS'04, 29 October 2004, Kemer–Antalya, Turkey.

Compositional Proofs for Real-Time Systems. GIIS meeting (“Gruppo di Interesse in Ingegneria del Software” (software engineering interest group)), 30 September 2004, Università del Sannio, Benevento, Italy.

## Research grants

SNF (Schweizerischer Nationalfonds – Swiss National Science Foundation) grant 200021-137931 “Complete and verifiable contracts (FullContracts)”, 151'482 CHF. Applicants: Carlo A. Furia and Bertrand Meyer; Duration: 3 years (from November 2011).

SNF (Schweizerischer Nationalfonds – Swiss National Science Foundation) grant 200020-134974 “Large scale automatic testing (LSAT)”, 157'482 CHF. Applicants: Carlo A. Furia and Bertrand Meyer; Duration: 3 years (from June 2011).

## Awards and scholarships

ICSE 2009 certificate of appreciation for “outstanding contribution to the creation and organization of the first Student Contest in Software Engineering” (SCORE 2009).

Three-year Ph.D. scholarship of the Italian *Ministero dell'Università e della Ricerca* (Ministry of Education, University and Research), January 2004.

## Affiliations

Association for Computing Machinery, member (since 2004).

Formal Methods Europe, member (since 2010).

Free Software Foundation, associate member (since 2005).

Electronic Frontier Foundation, member (since 2005).

## Professional service

Program committee member of the International Symposium on Temporal Representation and Reasoning (TIME): 2012.

Program chair (with Sebastian Nanz) of the 50th International Conference on Objects, Models, Components and Patterns (TOOLS Europe 2012).

Program committee member of the International Conference on Tests & Proofs (TAP): 2010, 2011.

Program committee member of the International Conference on Engineering of Complex Computer Systems (ICECCS): 2011, 2012.

Program committee member of the Interaction and Concurrency Experience (ICE): 2009, 2010.

Program committee member of the Student CONtest in softwaRE Engineering (SCORE 2009), an initiative of the 31st International Conference on Software Engineering (ICSE 2009).

Reviewer for various conferences—including FM, ICSE, and FSE (see also PC memberships)—and journals—including the Journal of Applied Non-Classical Logics, the ACM Transactions on Autonomous and Adaptive Systems, the Journal of Systems and Software, the Scientific Annals of Computer Science, the Journal on Computer Virology.

Reviewer for the PhD Dissertation Award 2012 of the Italian Association for Logic Programming (GULP).

Reviewer for funding agencies: the Netherlands Organisation for Scientific Research (NWO).

PhD students delegate, Dipartimento di Elettronica e Informazione, Politecnico di Milano, years 2005–2007.

Reviewer of the Italian translation of *Algorithmics* by D. Harel, Springer.

Trainer for the Italian regional trials of the International Olympiad in Informatics, year 2006.

Lecturer for the series of talks: *Lezioni di Ingegneria dell'Informazione*, organized by Politecnico di Milano for high-school students, winters 2006/2007, 2007/2008, and 2008/2009.

## Language proficiency

**Italian:** mother tongue.

**English:** proficient (both written and spoken).

**German:** basic knowledge.