

Damiano Zanardini

curriculum vitæ

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1 Studies

- 1997: HIGH SCHOOL: Liceo Scientifico Statale Annibale Calini, via Monte Suello 2, Brescia. SCORE: 60/60.
- 1997: Participation to the National Physics Olympic Games, Senigallia (Ancona), Italy.
- JULY 2002: Master Degree in Computer Science (*Laurea quinquennale in Informatica*), University of Pisa (*Università degli Studi di Pisa*), Italy. SCORE: 110/110 cum laude. MASTER'S THESIS TITLE: *Una semantica generale per la verifica e l'inferenza di tipi monomorfi*. SUPERVISOR: Prof. Giorgio Levi.
- FROM 1997 TO 2002: Ordinary Student of the Science section (*classe di Scienze*) at *Scuola Normale Superiore* of Pisa. SCORE: 70/70 cum laude. SUPERVISOR: Prof. Alessandro Profeti. FINAL DISSERTATION TITLE: *Relazioni tra domini astratti di sistemi di tipi del Lambda-calcolo tipato*.
- FROM FEBRUARY TO APRIL, 2002: Visitor at *École Normale Supérieure* of Paris.

2 Scientific Research

- APRIL 21ST, 2006: PhD degree at Computer Science Department of Verona University (*Dipartimento di Informatica, Università di Verona*). SUPERVISOR: Prof. Roberto Giacobazzi. PHD THESIS TITLE: *Certified Abstract Non-Interference: Object-Oriented Code Validation for Information Flow Security*.

- MAIN RESEARCH TOPICS: Abstract Interpretation, Static Program Analysis, Language-based Security, Information Flow, Type Systems, Functional Languages, Proof-Carrying Code, Program Slicing, Cost Analysis, Termination Analysis, Java Bytecode.
- RESUMÉ OF SCIENTIFIC ACTIVITY: Study of Information Flow properties of programs, particularly Abstract Non-Interference [13–16]. Algorithms and techniques for checking Abstract Non-Interference in Imperative, Object-Oriented and Functional programming languages. Application to Proof-Carrying code architectures in order to statically obtain security certificates for programs. Study of Abstract Dependencies and their relation with Information Flow and Program Slicing [12], semantic definition of Abstract Program Slicing [17–19]. Cost and Termination Analysis of Java Bytecode [6, 4, 7, 1, 8, 5, 11, 9, 2, 10, 3], construction of a realistic cost model, implementation of an analyzer for this task.
- FROM JUNE 19TH TO 27TH, 2004: SUMMER SCHOOL: *Software Security: from Theory to Practice*, Eugene, Oregon (USA).
- FROM SEPTEMBER TO OCTOBER, 2005: Visitor at LANDE Project (Head: Thomas Jensen), IRISA, Rennes, France.
- REFEREE FOR THE CONFERENCES:
 - SAS, 2004.
 - VMCAI, 2005.
 - SAS, 2005.
 - ICTCS, 2005.
 - SAS, 2006.
 - VMCAI, 2006.
 - PADL, 2007.
 - PEPM, 2007.
 - Bytecode, 2007.
 - ICLP, 2007.
 - PROLE, 2007.
 - ESOP, 2008.
 - SAC, 2008.
 - SAS, 2008.
 - CSF, 2008.
 - FTfJP, 2008.
 - LOPSTR, 2008.
 - VMCAI, 2009.
 - FAST, 2010.
 - ICLP, 2010.
 - PPDP, 2010.
 - SAS, 2010.
- REFEREE FOR JOURNALS:
 - Mathematical Structures in Computer Science, 2008.
 - Journal of Logic and Algebraic Programming, 2011.
- Member of the Organizing Committee of the *Static Analysis Symposium (SAS)*, Verona, August 2004.

- Member of the Program Committee of the *Workshop on Bytecode Semantics, Verification, Analysis and Transformation (Bytecode)*, Budapest, April 2008.
- Co-Chair (with Puri Arenas) of the Program Committee of the *Workshop on Logic-based methods in Programming Environments (WLPE)*, Udine, December 2008.
- FROM JUNE 2006 TO SEPTEMBER 2008: Post-Doc Researcher at CLIP lab, *Universidad Politécnica de Madrid*.
- CURRENT POSITION (FROM OCTOBER 2008): Temporary Lecturer (*Profesor Titular de Universidad interino*) at Department of Artificial Intelligence (*Departamento de Inteligencia Artificial*), *Universidad Politécnica de Madrid*.

3 Teaching Activity

- YEAR 2004/2005: Teaching Assistant (Teacher: Dr. Ugo Solitro) in *Introduction to Programming*, Degree in Computer Science, Faculty of Science, University of Verona.
- YEAR 2005/2006: Teaching Assistant (Teacher: Dr. Ugo Solitro) in *Introduction to Programming*, Degree in Applied Mathematics, Faculty of Science, University of Verona.
- YEAR 2008/2009: Lecturer in *Computational Logic*, European Master in Computational Logic, *Universidad Politécnica de Madrid*.
- YEAR 2008/2009: Lecturer in *Computational Logic*, Degree in Computer Science Engineering, *Universidad Politécnica de Madrid*.
- YEAR 2009/2010: Lecturer in *Computational Logic*, European Master in Computational Logic, *Universidad Politécnica de Madrid*.
- YEAR 2009/2010: Lecturer in *Computational Logic*, Degree in Computer Science Engineering, *Universidad Politécnica de Madrid*.
- YEAR 2009/2010: Lecturer in *Logic*, New Degree in Computer Science Engineering, *Universidad Politécnica de Madrid*.
- YEAR 2010/2011: Lecturer in *Logic*, New Degree in Computer Science Engineering, *Universidad Politécnica de Madrid*.
- YEAR 2010/2011: Lecturer in *Theory of Computability. Recursion, Possibilities and Limits of Machines*, Degree in Computer Science Engineering, *Universidad Politécnica de Madrid*.

References

1. Elvira Albert, Puri Arenas, Michael Codish, Samir Genaim, Germn Puebla, and Damiano Zanardini. Termination Analysis of Java Bytecode. In *Proceedings of the International Workshop on Termination (WST)*, Paris, France, June 2007.
2. Elvira Albert, Puri Arenas, Michael Codish, Samir Genaim, Germn Puebla, and Damiano Zanardini. Termination Analysis of Java Bytecode. In Gilles Barthe and Frank de Boer, editors, *Proceedings of the IFIP International Conference on Formal Methods for Open Object-based Distributed Systems (FMOODS)*, Lecture Notes in Computer Science, pages 2–18, Oslo, Norway, June 2008. Springer-Verlag, Berlin.

3. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, Diana Ramirez, and Damiano Zanardini. The COSTA cost and termination analyzer for java bytecode and its web interface (tool demo). In Anna Philippou, editor, *European Conference on Object-Oriented Programming (ECOOP)*, July 2008.
4. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. Automatic Cost Analysis of Java Bytecode. Technical Report CLIP10/2006.0, Technical University of Madrid (UPM), December 2006.
5. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. Applications of Static Slicing in Cost Analysis of Java Bytecode. In *International Workshop on Programming Language Interference and Dependence (PLID)*, Kongens Lyngby, Denmark, August 2007.
6. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. Cost Analysis of Java Bytecode. In Rocco De Nicola, editor, *Proceedings of the European Symposium on Computing (ESOP)*, volume 4421 of *Lecture Notes in Computer Science*, pages 157–172, Braga, Portugal, March 2007. Springer-Verlag, Berlin.
7. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. Experiments in Cost Analysis of Java Bytecode. In *Proceedings of the Workshop on Bytecode Semantics, Verification, Analysis and Transformation (Bytecode)*, Electronic Notes in Theoretical Computer Science, pages 67–83, Braga, Portugal, March 2007. Elsevier.
8. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. A generic framework for the cost analysis of java bytecode. In Ernesto Pimentel, editor, *Proceedings of Jornadas sobre Programacion y Lenguajes (PROLE)*, Zaragoza, Spain, September 2007. Thomson Paraninfo.
9. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. COSTA: A Cost and Termination Analyzer for Java Bytecode. *Journal of Object Technology*, March 2008.
10. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. COSTA: Design and Implementation of a Cost and Termination Analyzer for Java Bytecode. In Frank S. de Boer, Marcello M. Bonsangue, Susanne Graf, and Willem P. de Roever, editors, *Post-proceedings of the Software Technologies Concertation on Formal Methods for Components and Objects (FMCO)*, volume 5382 of *Lecture Notes in Computer Science (Revised Lectures)*, pages 113–132, Amsterdam, The Netherlands, October 2008. Springer-Verlag, Berlin.
11. Elvira Albert, Puri Arenas, Samir Genaim, Germn Puebla, and Damiano Zanardini. Removing Useless Variables in Cost Analysis of Java Bytecode. In *Proceedings of the ACM Symposium on Applied Computing (SAC)*, Fortaleza, Brazil, March 2008. ACM Press, New York.
12. Isabella Mastroeni and Damiano Zanardini. Data Dependencies and Program Slicing: from Syntax to Abstract Semantics. In *Proceedings of the ACM SIGPLAN Workshop on Partial Evaluation and Semantics-based Program Manipulation (PEPM)*, pages 125–134, San Francisco, USA, January 2008. ACM Press, New York.
13. Damiano Zanardini. Abstract Non-Interference in a functional Dependency Calculus. In *International Workshop on Programming Language Interference and Dependence (PLID)*, Verona, Italia, August 2004.
14. Damiano Zanardini. Higher-Order Abstract Non-Interference. In Pawel Urzyczyn, editor, *Proceedings of the 7th International Conference on Typed Lambda Calculi and Applications (TLCA)*, volume 3461 of *Lecture Notes in Computer Science*, pages 417–432, Nara, Japan, April 2005. Springer-Verlag, Berlin.

15. Damiano Zanardini. Abstract Non-Interference in a fragment of Java bytecode. In *Proceedings of the ACM Symposium on Applied Computing (SAC)*, pages 1822–1826, Dijon, France, April 2006. ACM Press, New York.
16. Damiano Zanardini. Analyzing Non-Interference with respect to Classes. In *Proceedings of the Italian Conference on Theoretical Computer Science (ICTCS)*, pages 57–69, Roma, Italy, October 2007. World Scientific.
17. Damiano Zanardini. Abstract Program Slicing. In *International Workshop on Programming Language Interference and Dependence (PLID)*, Valencia, Spain, July 2008.
18. Damiano Zanardini. The Semantics of Abstract Program Slicing. In *Proceedings of the IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM)*, pages 89–100, Beijing, China, September 2008. IEEE press.
19. Damiano Zanardini. The Semantics of Abstract Program Slicing. Technical Report CLIP4/2008.0, Technical University of Madrid (UPM), June 2008.