

Curriculum Vitae

Ceccato Mariano

Mariano Ceccato is tenured researcher in FBK (Fondazione Bruno Kessler) in Trento, Italy. He received the master degree in Software Engineering from the University of Padova, Italy, in 2003 and the PhD in Computer Science from the University of Trento in 2006 under the supervision of Paolo Tonella, with the thesis “Migrating Object Oriented code to Aspect Oriented Programming”.

His research interests include security testing, migration of legacy systems, aspect oriented programming and empirical studies. He will be program co-chair of the 12th IEEE Working Conference of Source Code Analysis and Manipulation (SCAM 2012) to be held in Riva del Garda, Italy.

1 Education and professional career

2003 Master Degree in Software Engineering, University of Padova on 2003, March 11th. Master thesis title: “*Re-engineering of a Data Warehouse for business intelligence in a multinational firm*”, written in the Information Technology department in Alcoa Servizi in Venice. Thesis advisor: Sergio Congiu.

2006 PhD in Computer Science, the University of Trento. PhD thesis title: “*Migrating Object Oriented code to Aspect Oriented Programming*”. Advisor: Paolo Tonella.

2007 Post-doc at IRST, Software Engineering group.

2008 Tenure-track researcher at FBK (Fondazione Bruno Kessler), Software Engineering group.

2011 Confirmed researcher at FBK (Fondazione Bruno Kessler), Software Engineering group.

1.1 Projects

ReTrust (2006-2009): STREP European project (Remote Entrusting) on the remote authentication of software execution, in collaboration with University of Trento, Leuven, St. Petersburg, Politecnico of Torino and Gemalto.

IBT (2007-2010): Industrial project with IBT (Informatica Bancaria Trentina), for the re-engineering of a large (8 million lines of BAL code) legacy application and its migration toward a modern, object-oriented architecture.

2 Teaching

2004-2006 (three years) “Laboratory of Software Analysis”, University of Trento (Teaching assistant).

2007-2008 (two years) “Laboratory of Software Analysis”, University of Trento.

2009-2010 (two years) “Software Analysis and Testing”, University of Trento (Teaching assistant).

2010 “Empirical Software Measurement”, University of Bolzano (Teaching assistant).

3 Committees and reviewing

3.1 Program chair

- *SCAM 2012*: Twelfth IEEE International Working Conference on Source Code Analysis and Manipulation, Riva del Garda, Italy.

3.2 Program committee

- *WCRE 2011*: 18th Working Conference on Reverse Engineering, IEEE. October 17 - 20, 2011. Limerick, Ireland,
- *SCAM 2011*: Eleventh IEEE International Working Conference on Source Code Analysis and Manipulation, 25th-26th September 2011, Williamsburg, VA, USA,
- *ICSM 2011*: 27th IEEE International Conference on Software Maintenance, September 25 - October 1, 2011
- *PDP 2011*: Special Session “Security in Networked and Distributed Systems” in 19th Euromicro International Conference on Parallel, Distributed and network-based Processing (PDP 2011) February 9-11, 2011, Ayia Napa, Cyprus
- *MMM-ACNS 2010*: International Conferences on Mathematical Methods, Models and Architectures for Computer Network Security. 2010, St.Petersburg, Russia.
- *SA&PS4CS-2010*: First International Workshop on Scientific Analysis and Policy Support for Cyber Security. 2010, St.Petersburg, Russia.
- *WCRE 2010*: 17th Working Conference on Reverse Engineering. 2010, Boston’s North Shore in Beverly, Massachusetts USA.
- *SCAM 2010*: Tenth IEEE International Working Conference on Source Code Analysis and Manipulation. 2010, Timisoara, Romania.

- *PDP 2010*: Special Session “Security in Networked and Distributed Systems” in 18th Euromicro International Conference on Parallel, Distributed and network-based Processing (PDP 2010). 2010, Pisa, Italy.
- *SSP 2009*: First International Workshop on Software Security Process held in conjunction with IEEE International Conference on Information Privacy, Security, Risk and Trust. 2009, Vancouver, Canada.
- *RE-TRUST 2008*: First International Workshop on Remote Entrusting. 2008, Trento.
- *EWAS’06*: 3rd European Workshop on Aspects in Software. 2006, University of Twente, Enschede, The Netherlands.
- *LATE workshop 2005*: Linking Aspect Technology and Evolution workshop held in conjunction with 4th Aspect-Oriented Software Development Conference (AOSD 2005). 2005, Chicago, USA.

3.3 Review for journals

- IEEE Transactions on Software Engineering, IEEE computer society.
- IEEE Software, IEEE computer society.
- ACM Transactions on Software Engineering and Methodology, ACM.
- ACM Transactions on information and System Security, ACM.
- Journal of Automated Software Engineering, Springer.
- Empirical Software Engineering, Springer.
- International Journal of Information Security, Springer.
- Journal of Software Maintenance and Evolution: Research and Practice, Wiley and Sons.
- IET software, IET.

4 Publication list

4.1 Journal papers

1. Mariano Ceccato, Paolo Tonella. CodeBender: Remote Software Protection Using Orthogonal Replacement. *IEEE Software*, 28(2), pp. 28-34, March/April, 2011.
2. Mariano Ceccato, Thomas RoyDean, Paolo Tonella and Davide Marchignoli. Migrating legacy data structures based on variable overlay to java. *Journal of Software Maintenance and Evolution-Research and Practice*, 22(3):211-237, 2010. John Wiley & Sons.

3. Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella, and Mariano Ceccato. How developers' experience and ability influence web application comprehension tasks supported by uml stereotypes: A series of four experiments. *IEEE Transactions on Software Engineering*, 36(1):96-118, Jan.-Feb. 2010.
4. Mariano Ceccato and Paolo Tonella, Dynamic Aspect Mining. *IET Software*, Vol. 3 No. 4 pp.321-336 (2009).
5. Paolo Tonella, Mariano Ceccato, Davide Marchignoli, Cristina Matteotti and Thomas Roy Dean, Migrazione di sistemi software legacy. *Mondo Digitale*, (30):31-39, 2009.
6. Mariano Ceccato, Thomas Roy Dean and Paolo Tonella. Recovering structured data types from a legacy data model with overlays. *Information and Software Technology*, 51(10):1454-1468, 2009.
7. Mariano Ceccato, Mila dalla Preda, Jasvir Nagra, Christian Collberg and Paolo Tonella. Trading-off security and performance in barrier slicing for remote software entrusting. *Journal of Automated Software Engineering*, Springer. 16(2):235-261, June 2009.
8. Filippo Ricca, Marco Torchiano, Massimiliano Di Penta, Mariano Ceccato and Paolo Tonella. Using acceptance tests as a support for clarifying requirements: A series of experiments. *Information and Software Technology*, 51(2):270-283, 2009.
9. Filippo Ricca, Marco Torchiano, Massimiliano Di Penta, Mariano Ceccato and Paolo Tonella. The use of executable Fit tables to support maintenance and evolution tasks. *Electronic Communications of the EASST*, 8, 2008.
10. Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella, Mariano Ceccato. How design notations affect the comprehension of Web applications. *Journal of Software Maintenance and Evolution: Research and Practice*. Vol. 19, n. 5, pp. 339-359. September/October 2007.
11. David Binkley, Mariano Ceccato, Mark Harman, Filippo Ricca, Paolo Tonella. Tool-Supported Refactoring of Existing Object-Oriented Code into Aspects. *IEEE Transactions on Software Engineering*. Vol. 32, No. 9, pp. 698-717, September 2006
12. Mariano Ceccato, Marius Marin, Kim Mens, Leon Moonen, Paolo Tonella, Tom Tourwe. Applying and combining three different aspect Mining Techniques, *Software Quality Journal*. Volume 14, Issue 3, Sep 2006, Pages 209-231
13. Paolo Tonella, Mariano Ceccato. Refactoring the Aspectizable Interfaces: an Empirical Assessment. *IEEE Transactions on Software Engineering*. Vol. 31, n. 10, pp. 819-832. October, 2005.

4.2 Conference papers

1. Mariano Ceccato, Paolo Tonella. Static analysis for enforcing intra-thread consistent locks in the migration of a legacy system. In Proceedings of the *26th IEEE International Conference on Software Maintenance (ICSM 2010)*, Timisoara, Romania, September 2010.
2. Mariano Ceccato, Massimiliano Di Penta, Jasvir Nagra, Paolo Falcarin, Filippo Ricca, Marco Torchiano and Paolo Tonella. The Effectiveness of Source Code Obfuscation: an Experimental Assessment. In Proceedings of the *17th IEEE International Conference on Program Comprehension (ICPC 2009)*, Vancouver, Canada, 17-19 May 2009. IEEE pp. 178-187.
3. Mario Luca Bernardi, Giuseppe A. Di Lucca, and Mariano Ceccato. Workshop on maintenance of aspect oriented systems. In A. Winter, R. Ferenc and J. Knodel, editor, Proceedings of the *13th European Conference on Software Maintenance and Reengineering (CSMR 2009)*, pages 273-274. IEEE Computer Society, March 2009.
4. Mariano Ceccato, Paolo Tonella, Mila Dalla Preda and Anirban Majumdar. Remote software protection by orthogonal client replacement. In D. Shin, editor, Proceedings of the *24th ACM Symposium on Applied Computing (SAC 2009)*, pages 448-455. ACM SIGAPP, March 2009.
5. Mariano Ceccato, Thomas Roy Dean, Paolo Tonella and Davide Marchignoli. Data Model Reverse Engineering in Migrating a Legacy System to Java. In *15th Working Conference on Reverse Engineering, 2008*. WCRE '08, Antwerp, Belgium, 15-18 October 2008. IEEE pp. 177-186 (2008).
6. Mariano Ceccato, Thomas Roy Dean and Paolo Tonella. Using program transformations to add structure to a legacy data model. In *Source Code Analysis and Manipulation, 2008 Eighth IEEE International Working Conference on* pages 197-206, September 2008.
7. Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella, Mariano Ceccato and Corrado Aron Visaggio. Are Fit tables really talking? a series of experiments to understand whether Fit tables are useful during evolution tasks. In Proceedings of the *30th International Conference on Software Engineering (ICSE 2008)*, pages 361-370. IEEE Computer Society, 10-18 May 2008.
8. Mariano Ceccato. Automatic support for the migration towards aspects. In K. Kontogiannis, C. Tjortjis, and A. Winter, editors, Proceedings of the *12th European Conference on Software Maintenance and Reengineering (CSMR 2008)*, pages 298-301. IEEE Computer Society, April 2008.
9. Mariano Ceccato, Paolo Tonella, and Cristina Matteotti. Goto elimination strategies in the migration of legacy code to java. In K. Kontogiannis, C. Tjortjis, and A. Winter, editors, Proceedings of the *12th European*

Conference on Software Maintenance and Reengineering (CSMR 2008), pages 53-62. IEEE Computer Society, April 2008.

10. Mariano Ceccato, Jasvir Nagra and Paolo Tonella. Distributing trust verification to increase application performance. In D. E. Baz, J. Bourgeois and F. Spies editors, *Proc. of the 16th Euromicro Conference on Parallel, Distributed and Network-based Processing (PDP 2008)*, pages 604-610. IEEE Computer Society, February 2008.
11. Mariano Ceccato, Yoram Ofek and Paolo Tonella. Remote entrusting by run-time software authentication. In V. Geffert, J. Karhumaki, A. Bertoni, B. Preneel, P. Navrat, and M. Bielikova, editors, *Proceedings of the 34th Conference on Current Trends in Theory and Practice of Computer Science (SOFSEM 2008)*, volume 4910 of *Lecture Notes in Computer Science*, pages 83-97. Springer, 2008.
12. Mariano Ceccato. Migrating object oriented code to aspect oriented programming. In *proceedings of the 23rd IEEE International Conference on Software Maintenance, 2007 (ICSM 2007)* pages 497-498. IEEE Computer Society, October 2007.
13. Mariano Ceccato, Mila Dalla Preda, Jasvir Nagra, Christian Collberg and Paolo Tonella. Barrier Slicing for Remote Software Trusting, In *Proceedings of the Seventh IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2007)*. pp.27-36, Sept. 30 2007-Oct. 1 2007. IEEE Computer Society, Washington, DC.
14. Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella and Mariano Ceccato. The Role of Experience and Ability in Comprehension Tasks Supported by UML Stereotypes. In *Proceedings of the 29th International Conference on Software Engineering (ICSE 2007)*. pp. 375-384. May, 2007. IEEE Computer Society, Washington, DC.
15. Filippo Ricca, Marco Torchiano, Massimiliano Di Penta, Mariano Ceccato and Paolo Tonella. The use of executable fit tables to support maintenance and evolution tasks. *Proceedings of the Third International ERCIM Symposium on Software Evolution (Evol 2007)*, pages 83-92, October 2007.
16. Filippo Ricca, Massimiliano Di Penta, Marco Torchiano, Paolo Tonella, Mariano Ceccato An empirical study on the usefulness of Conallen's stereotypes in Web application comprehension. *Proceedings of the Eighth IEEE International Symposium on Web Site Evolution (WSE'06)* pp. 58-68 September, 2006. IEEE Computer Society.
17. Dave Binkley and Mariano Ceccato and Mark Harman and Filippo Ricca and Paolo Tonella, Automated Refactoring of Object Oriented Code into Aspects, In *Proceedings of the 21st IEEE Int. Conf. on Software Maintenance (ICSM 2005)*. pp. 27-36. September, 2005. IEEE Computer Society, Los Alamitos, California, USA.

18. Paolo Tonella and Mariano Ceccato, Aspect Mining through the Formal Concept Analysis of Execution Traces, In Proceedings of the *IEEE Eleventh Working conference on Reverse Engineering (WCRE 2004)*. pp. 112-121. November, 2004. IEEE Computer Society, Los Alamitos, California, USA.
19. Paolo Tonella and Mariano Ceccato, Migrating Interface Implementations to Aspects, In Proceedings of the *20th IEEE Int. Conf. on Software Maintenance (ICSM 2004)*. Mark Harman and Bogdan Korel (eds.). pp. 220-229. September, 2004. IEEE Computer Society, Chicago, Illinois, USA.

4.3 Workshop papers

1. Andrea Avancini and Mariano Ceccato. Towards security testing with taint analysis and genetic algorithms. In *SESS 2010: Proceedings of the 2010 ICSE Workshop on Software Engineering for Secure Systems*, pages 65-71, New York, NY, USA, 2010. ACM.
2. Mariano Ceccato, Massimiliano Di Penta, Jasvir Nagra, Paolo Falcarin, Filippo Ricca, Marco Torchiano and Paolo Tonella. Towards experimental evaluation of code obfuscation techniques. In *QoP '08: Proceedings of the 4th ACM workshop on Quality of protection*, Alexandria (Virginia), USA, 27 October 2008. ACM pp. 39-46 (2008).
3. Filippo Ricca, Marco Torchiano, Mariano Ceccato, Paolo Tonella. Talking Tests: an Empirical Assessment of the Role of Fit Acceptance Tests in Clarifying Requirements Proceedings of *9th International Workshop On Principles of Software Evolution (IWPSE 2007)* pp 51-58, September 2007. Dubrovnik, Croatia.
4. Mariano Ceccato and Marius Marin and Kim Mens and Leon Moonen and Paolo Tonella and Tom Tourwe, A Qualitative Comparison of Three Aspect Mining Techniques. Proceedings of the *13th International Workshop on Program Comprehension (IWPC 2005)*. pp. 13-22. May, 2005. IEEE Computer Society, Washington, DC, USA.
5. Dave Binkley and Mariano Ceccato and Mark Harman and Paolo Tonella, Automated Pointcut Extraction. In on-line Proceedings of the *First Linking Aspect Technology and Evolution Workshop (LATE 2005)*. March, 2005. Chicago, Illinois.
6. Mariano Ceccato and Paolo Tonella and Filippo Ricca, Is AOP code easier or harder to test than OOP code?. In on-line Proceedings of the *First Workshop on Testing Aspect-Oriented Programs (WTAOP 2005)*. March, 2005. Chicago, Illinois.

7. Mariano Ceccato and Paolo Tonella, Measuring the Effects of Software Aspectization. In Cd-rom Proceedings of the *1st Workshop on Aspect Reverse Engineering* (WARE 2004). November, 2004. Delft, The Netherlands.
8. Mariano Ceccato and Paolo Tonella, Adding Distribution to Existing Applications by means of Aspect Oriented Programming. In Proceedings of the *4th IEEE Int. Workshop on Source Code Analysis and Manipulation* (SCAM 2004). Rainer Koschke and Michael Van de Vanter (eds.). pp. 107-116. September, 2004. IEEE Computer Society, Chicago, Illinois, USA.