

# MARCELO MEDEIROS ELER

October/2015

## ▣ PERSONAL INFORMATION

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Name: Marcelo Medeiros Eler  
Birth: 29/10/1982 - Martinópolis/SP - Brazil  
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## ▣ SUMMARY

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I am an Assistant Professor at University of São Paulo (USP), Brazil. My responsibilities include teaching and advising undergraduate and graduate students, and also conducting scientific research. My research interests include software engineering with emphasis on software testing, software analysis, programming languages and service-oriented architectures. I'm particularly interested in approaches to automate software testing activities, especially using symbolic and concolic execution to generate test data. I'm also interested in integrating testing tools with development environments and other testing tools and frameworks in order to transfer scientific knowledge to the daily activities of software testers. Moreover, I'm interested in investigating how to improve software testability by analyzing real world software and proposing design patterns, refactoring techniques and even code transformations.

## ▣ EDUCATION

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2007 - 2012: Ph.D. in Computer Science.  
University of São Paulo (USP), Brazil  
Advisor: Paulo Cesar Masiero  
Theme: Structural Testing of Service-Oriented Systems

2010 - 2011: Visiting Scholar at ISTI-CNR, Italy  
Supervisor: Antonia Bertolina  
Research: Structural Testing of Service-Oriented Systems

2004 - 2006: Master Degree in Computer Science.  
University of São Paulo (USP), Brazil  
Advisor: Paulo Cesar Masiero  
Theme: Software Development using Aspects and Components

2000 - 2003: Bachelor Degree in Computer Science.  
University of Oeste Paulista (UNOESTE), Brazil

## ▣ LANGUAGES

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English: fluent speaking, reading and writing.  
Italian: advanced speaking, reading and writing.  
Portuguese: native language.

## ▣ PROFESSIONAL EXPERIENCE

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- 2013 - present: Assistant Professor, University of São Paulo - São Paulo, SP, Brazil
- 2012 - 2013: Adjunct Professor, Faculdades Sumaré - São Paulo, SP, Brazil
- 2012 - 2013: Adjunct Professor, Universidade Nove de Julho - São Paulo, SP, Brazil
- 2006 - 2008: Adjunct Professor, Centro Univ. Barão de Mauá - Ribeirão Preto, SP, Brazil
- 2006 - 2007: Adjunct Professor, Faculdades Bandeirantes - Ribeirão Preto, SP, Brazil
- 2002 - 2003: Software Developer, Academia Apolo - Martinópolis, SP, Brazil
- 2003 - 2003: Software Developer, Univ. do Oeste Paulista, Presidente Prudente, SP, Brazil
- 2003 - 2003: Programming Instructor, Centro Paula Souza, Presidente Prudente, SP, Brazil

## ▣ RESEARCH PROJECTS

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- 2014 - 2016: Automatic test data generation to cover exception-dependent paths using symbolic execution. National Project. Position: Coordinator. Sponsor: FAPESP.
- 2014 - 2016: A Security and Privacy Model for M-Services in Toy Computing. International Project. Position: Participant. Coordinators: Marcelo Fantinato (Brazil) and Patrick Hung (Canada). Sponsor: CNPq.
- 2014 - 2016: Supporting formal and automated testing of mobile applications. National Project. Position: Participant. Coordinator: Andre Endo. Sponsor: CNPq.
- 2010 - 2011: CHOReOS: Large Scale Choreographies of the Future Internet . International Project. Position: Participant. Coordinator: Thales Communications S.A. Sponsor: CHOReOS consortium (Europe).
- 2008 - 2009: Quality Platform for Open Source Software (Qualipso). International Project. Position: Participant. Coordinator: Ingegneria Informatica SPA.

## ▣ PUBLICATIONS

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ROCHA, R. ; FANTINATO, M.; Thom, L. ; ELER, M. M. . **Dynamic Product Line for Business Process Management**. Dynamic product line for Business Process Management. In: Business Process Management Journal, v. 21, p. 1224-1256, 2015.

ELER, M. M. ; DURELLI, VINICIUS H.S. ; ENDO, ANDRE T. . **Analyzing Exceptions in the Context of Test Data Generation Based on Symbolic Execution**. In: The 27th International Conference on Software Engineering and Knowledge Engineering (SEKE), 2015, Pittsburgh - EUA.

OLIVEIRA, A. D. A.; ELER, M. M.. **Accessibility in e-government: a study on the implementation of web standards in domains gov.br**. In: Brazilian Symposium on Information Systems (SBSI), 2015, Goiânia, Brazil. (in portuguese)

ELER, M. M. ; ENDO, ANDRE T. ; DURELLI, VINICIUS H.S. **Quantifying the Characteristics of Java Programs That May Influence Symbolic Execution from a Test Data Generation Perspective**. In: 2014 IEEE 38th Annual Computer Software and Applications Conference (COMPSAC), 2014, Vasteras - Sweden.

SOUZA, K. S. ; FANTINATO, M. ; ELER, M. M.. **Systematizing the Service-Oriented Requirements Engineering through I\* Framework and Web Services**. In: 2014 IEEE International Conference on Services Computing (SCC), 2014, Anchorage - EUA.

ELER, M. M. ; ENDO, A. T. ; DURELLI, V. H. S.. **Covering User-Defined Data-flow Test Requirements Using Symbolic Execution**. In: XIII Brazilian Symposium on Software Quality (SBQS), 2014, Blumenau, Brazil.

LEMOS, O. A. L. ; ELER, M. M. ; FERRARI, F. C. ; MALDONADO, J. C. ; MASIERO, P. C.. **Evaluation studies of software testing research in Brazil and in the world: A survey of two premier software engineering conferences**. The Journal of Systems and Software (JSS), v. 86, p. 951-969, 2013.

ELER, M. M. ; BERTOLINO, A. ; MASIERO, P. C.. **Applying structural testing to services using testing interfaces and metadata**. International Journal of Software and Informatics (IJSI), v. 7, p. 239-271, 2013.

ELER, M. M. ; MASIERO, P. C.. **BISTFaSC: An Approach to Embed Structural Testing Facilities into Software Components**. In: 2013 VII Brazilian Symposium on Software Components, Architectures and Reuse (SBCARS), 2013, Brasília, Brazil

ELER, M. M. ; MASIERO, P. C.. **An evaluation of using structural testing information to perform web service monitoring**. In: 24th International Conference on Software Systems Engineering and their Applications (ICSSEA), 2012, Paris-France.

LEMOS, O. A. L. ; FERRARI, F. C. ; ELER, M. M. ; MALDONADO, J. C. ; MASIERO, P. C. . **Evaluation Studies of Software Testing Research in the Brazilian Symposium on Software Engineering**. In: Brazilian Conference on Software: Theory and Practice (CBSOFT), 2011, Sao Paulo.

ELER, M. M. ; BERTOLINO, A. ; MASIERO, P. C.. **More Testable Service Compositions by Test Metadata**. In: 6th IEEE International Symposium on Service-Oriented System Engineering (SOSE), 2011, Irvine - EUA.

ELER, M. M. ; DELAMARO, M. E. ; MASIERO, P. C. . **Using structural testing information to support monitoring activities**. In: 2011 IEEE 6th International Symposium on Service Oriented System Engineering (SOSE), 2011, Irvine.

ELER, M. M. ; DELAMARO, M. E. ; MASIERO, P. C. ; MALDONADO, J. C.. **Built-in structural testing of web services**. In: Brazilian Conference on Software: Theory and Practice (CBSOFT),

2010, Salvador.

ELER, M. M. ; ENDO, A. T. ; DELAMARO, M. E. ; MALDONADO, J. C. ; CHAIM, Marcos Lordello ; BEDER, D. M. ; MASIERO, P. C.. **JaBUTiService: A Web Service for Structural Testing of Java Programs**. In: 33rd Software Engineering Workshop (SEW), 2009, Skovde - Sweden.

ELER, M. M. ; MASIERO, P. C. . **Aspect as Components**. In: Proceedings of the 9th International Conference on Software Reuse (ICSR) - Lecture Notes on Computer Science, 2006, Torino, Italy.

ELER, M. M. ; MASIERO, P. C. . **A method for aspect and component based software development**. In: Component-Based Development Brazilian Workshop (former WDBC, now SB-CARS), 2005, Juiz de Fora - MG, Brazil.(in portuguese)

ELER, M. M. ; OLIVEIRA JUNIOR, A. A. ; BRAMBILA, J. E. ; FABRI, J. A. ; SOLDA, R. B. . **Building a Fuzzy Specialist System for Windows**. The Informatic Symposium of Planalto Medio, 2003, Passo Fundo, Brazil.

ELER, M. M. ; RE, R. . **Using Hyper/J to develop and to instantiate frameworks O.O.**. In: V Informatic and Technology Forum of Maringá , 2003, Maringá, Brazil.

#### ▣ INVITED TALKS AND PRESENTATIONS

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1. Analyzing Exceptions in the Context of Test Data Generation Based on Symbolic Execution. SEKE 2015. Pittsburgh, PA, USA.
2. Quantifying the Characteristics of Java Programs That May Influence Symbolic Execution from a Test Data Generation Perspective. COMPSAC 2014. Vasteras, Sweeden.
3. Testing Service-Oriented Architectures: concepts, perspectives and challenges. University of São Paulo 2013. São Paulo, Brazil. (in portuguese)
4. Using symbolic execution and constraint solvers to support software testing. UNESP 2013. Presidente Prudente, Brazil. (in portuguese)
5. More Testable Service Compositions by Test Metadata. SOSE 2011. Irvine, CA, USA.
6. Using structural testing information to support monitoring activities. SOSE 2011. Irvine, CA, EUA.
7. JaBUTiService: A Web Service for Structural Testing of Java Programs. SEW 2009. Skovde, Sweden.
8. Developing software using components and aspects. WDBC 2005. Juiz de Fora (2005), Bauru(2005), Brazil. (in portuguese)
9. Building object oriented frameworks using hyperJ. Maringa (2003), Brazil. (in portuguese)
10. RSA cryptography algorithms. Maringa(2001), São Paulo(2001), Presidente Prudente(2001), Brazil. (in portuguese)

## ▣ OTHER RESEARCH ACTIVITIES

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- Journal reviewer:
  1. 2014: IEEE Transactions on Software Engineering
  2. 2014: Journal of Universal Computer Science
  3. 2014: Interciência Sociedade - Revista Eletrônica.
  
- Program comitte:
  1. 2015: International Workshop on Engineering Service Oriented Applications.
  2. 2015: Brazilian Symposion on Components, Architectures and Reuse.
  3. 2014: International Workshop on Software Test Automation.
  4. 2014:International Conference on Services Computing.
  5. 2014: International Workshop on Engineering Service Oriented Applications.
  6. 2014: Brazilian Symposion on Components, Architectures and Reuse.
  7. 2013: Brazilian Symposion on Software Engineering. (paper review)
  8. 2013: Brazilian Symposion on Components, Architectures and Reuse.
  9. 2013: Latin-america conference on Informatics. (paper review)

## ▣ CURRENT STUDENTS

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1. Alberto Dumont (MSc.).  
Theme: Interoperability models for e-Government.
2. Luciano Gonçalves de Carvalho (MSc.).  
Theme: Security and privacy model for M-Services.
3. Robinson Crusoé (MSc.).  
Theme: Generating database samples to test SQL statements.
4. Carolina Luiza Chamas (MSc.).  
Theme: Big data and BI in the context of cell phone plans.
5. Ana Klyssia Martins Vasconcelos (MSc.)  
Theme: Software Product Management and Software Product Lines.
6. Camila Faria de Castro (Undergraduate)  
Theme: Patterns of code are not completely covered by testers.
7. Decio de Souza Oliveira Júnior (Undergraduate)  
Theme: Patterns of code that are not completely covered by testing tools (e.g. evosuite, jcute).
8. Letícia Gomes Macedo (Undergraduate)  
Theme: Information Systems strategies to increase blood donations in blood banks.