

Curriculum Vitae - Sergio Castro

September 2014

Professional Objective

Research and application of logic-programming techniques for mining, measuring, refactoring and transforming program source code and other kind of software artefacts.

Personal Data

Last Name: Castro
First Name: Sergio
Professional Address: Place Sainte Barbe, 2. B-1348 Louvain-la-Neuve, Belgium.
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E-mail: sergio.castro@uclouvain.be
sergioc78@yahoo.com
Date of Birth: 04/06/1978
Place of Birth: Guayaquil - Ecuador
Nationality: Ecuadorian
Place of residence: Brussels, Belgium (Permanent residence permit).
Website &
Programming Portfolio: <http://sergio-castro.github.com/>

Education

Post-Graduate Studies

PhD. in Engineering Sciences.
"Université catholique de Louvain" (UCL) Louvain-la-Neuve - Belgium
2007 - 2014

Master of Science in Computer Science: European Master in Object-Component-Aspect Oriented and Software Engineering Technologies (EMOOSE).
Great Distinction Mention.
"Vrije Universiteit Brussel" (VUB) Brussels - Belgium
"Ecole des Mines de Nantes" (EMN) Nantes - France
(double diploma program)
2005 - 2006

Certificate of specialised formation in the field of Computer Science.
"Ecole des Mines de Nantes" Nantes - France
2005 - 2006

Engineering Studies

Engineering degree in Electricity and Computer Science: Specialisation in Information Technology Systems (ITS).
"Escuela Superior Politécnica del Litoral" (ESPOL) Guayaquil - Ecuador
1996 - 2004

High School

School-leaving certificate in Physics and Mathematics.
"Colegio Liceo De Francia"
1990 – 1996

Guayaquil – Ecuador

School-leaving certificate in Arts (parallel studies).
"Conservatorio Antonio Neumane"
1990 – 1996

Guayaquil – Ecuador

Research Work

ARTICLES IN SCIENTIFIC MAGAZINES

S.CASTRO, K. MENS & P. MOURA. *Automatic Integration of Hybrid Java-Prolog Entities with LogicObjects*. To appear in the Association for Logic Programming (ALP) Newsletter. Out of Left Field track. September Issue. (2014).

JOURNALS

S. CASTRO, K. MENS & P. MOURA. *JPC: A Library for Categorising and Applying Inter-Language Conversions Between Java and Prolog*. Science of Computer Programming: Experimental Software and Toolkits (EST 3) (Submitted).

S. CASTRO, C. De ROOVER, A. KELLENS, A. LOZANO & K. MENS. *Diagnosing and Correcting Design Inconsistencies in Source Code with Logical Abduction*. Science of Computer Programming: Special Issue on Software Evolution, Adaptability and Variability. V. 76 N. 12 P. 1113 - 1129.

J. BRICHAU, A. KELLENS, S. CASTRO & T. D'HONDT. *Enforcing Structural Regularities in Software using Intensive*. Science of Computer Programming: Experimental Software and Toolkits (EST 3). V. 75. P. 232-246.

CONFERENCES AND SYMPOSIUMS

S.CASTRO, K. MENS & P. MOURA. *Customisable Handling of Java References in Prolog Programs*. Proceedings of the International Conference on Logic Programming (ICLP) (To appear). (ICLP 2014).

S.CASTRO, K. MENS & P. MOURA. *LogicObjects: Enabling Logic Programming in Java Through Linguistic Symbiosis*. Proceedings of the 15th International Symposium on Practical Aspects of Declarative Languages (PADL 2013). (Acceptance rate: 50%).

S. CASTRO, J. FABRY, K. MENS & T. D'HONDT. *A Unified Mechanism for Improving Advanced Transaction Management in Web Services*. International Conference of the Chilean Computer Science Society (SCCC 2007). (Acceptance rate: 35%). IEEE publication.

PUBLISHED WORKSHOP PAPERS

S. CASTRO. *LogicObjects: A Portable and Extensible Approach for Linguistic Symbiosis between an Object-Oriented and a Logic Programming Language*. International Conference on Logic Programming (Doctoral Consortium). Istanbul, Turkey. 2013.

S. CASTRO, K. MENS & P. MOURA. *LogicObjects : A Linguistic Symbiosis Approach to Bring the Declarative Power of Prolog to Java*. Proceedings of the Workshop on Reflection, AOP and Meta-Data for Software Evolution (RAM-SE'12). Co-located with the European Conference in Object-Oriented Programming (ECOOP 2012).

S. CASTRO, S. GONZALEZ, K. MENS & M. DENKER. *DynamicSchema: A Lightweight*

Persistency Framework for Context-Oriented Data Management.

Proceedings of the Workshop on Context-Oriented Programming (COP'12). Co-located with the European Conference in Object-Oriented Programming (ECOOP 2012).

S. CASTRO, A. KELLENS, C. De ROOVER & K. Mens. *Generation and Composition of Corrective Actions to Structural Design Problems in Code with Heal*.

Proceedings of the 9th Belgian-Netherlands Software Evolution Seminar (BENEVOL 2010), Lille (France).

J. BRICHAU, A. KELLENS, S. CASTRO & T. D'HONDT. *Enforcing Structural Regularities in Software using IntensiVE*. International Workshop on Advanced Software Development Tools and Techniques (WASDeTT 2008). Co-located with the European Conference in Object-Oriented Programming (ECOOP 2008).

S. CASTRO, J. BRICHAU & K. MENS. *Diagnosis and Semi-automatic Correction of Detected Design Inconsistencies in Source Code*. Proceedings of the International Workshop on Smalltalk Technologies (IWST 2009), Brest (France).

S.CASTRO, K. MENS & J. BRICHAU. *Towards a Taxonomy of Tools for Documenting Code Design*. Proceedings of the workshop on Query Technologies and Applications for Program Comprehension (QTAPC 2008). Co-located with the IEEE International Conference on Program Comprehension. (ICPC 2008).

UNPUBLISHED WORKSHOP PAPERS

S. CASTRO, K. MENS & P. MOURA. *JPC: A Library for Modularising Inter-Language Conversion Concerns between Java and Prolog*. International Workshop on Advanced Software Development Tools and Techniques (WASDeTT 2013). Co-located with the European Conference in Object-Oriented Programming (ECOOP 2013).

S. CASTRO, A. KELLENS, C. De ROOVER & K. MENS. *Diagnosis and Correction of Structural Design Inconsistencies in Software. 8th Belgian-Netherlands Software Evolution Seminar (BENEVOL 2009), Louvain-la-Neuve (Belgium).*

S. CASTRO and J. BRICHAU & K. MENS. *Towards an Automated Tool for Correcting Design Decay. 7th Belgian-Netherlands Software Evolution Seminar (BENEVOL 2008), Eindhoven (Netherlands).*

TECHNICAL REPORTS

A. HUBAUX, A. CLEVE, P. SCHOBGENS, A. KELLER, O. MULIAWAN, S. CASTRO, K. MENS, D. DERIDDER & R. VAN DER STRAETEN. *Towards a Unifying Conceptual Framework for Inconsistency Management Approaches: Definitions and Instantiations*. Research report. FUNDP, Namur. Faculté d'Informatique. 2009.

SEMINARS AND DEMONSTRATIONS

S. CASTRO, K. MENS & P. MOURA. *Towards a Software Ecosystem for Java-Prolog Interoperability*. SATToSE: Seminar on Advanced Tools & Techniques for Software Evolution. Bern (Switzerland) July 2013.

S.CASTRO. *Generation of corrective actions to code design problems*. SATToSE: Seminar on Advanced Tools & Techniques for Software Evolution. Koblenz (Germany) April 2011.

S.CASTRO. *Diagnosis and Correction of Structural Design Inconsistencies in Software*. SATToSE: Seminar on Advanced Tools & Techniques for Software Evolution. Clapiers (France) April 2010.

S.CASTRO. *Inconsistency Management in Source Code with Abductive Logic Programming*. SATToSE: Seminar on Advanced Tools & Techniques for Software Evolution. Baie de Somme (France). May 2009.

J. BRICHAU, A. KELLENS, K. MENS & S. CASTRO. *The IntensiVE Tool Suite*. Working Conference on Reverse Engineering (WCRE), 2008.

S.CASTRO. *Towards Semi-automatic Inconsistency Management Between Design Regularities*

and Source Code. SATToSE: Seminar on Advanced Tools & Techniques for Software Evolution. Waulsort. (Belgium). February 2008.

Dissertations

PhD thesis

A Portable Approach for Bidirectional Integration between a Logic and a Statically-Typed Object-Oriented Programming Language.

Promoter: Prof. Dr. Kim Mens.

Université catholique de Louvain. September 2014.

Master thesis

ACTA Dependencies as a Unified Mechanism for Compensation, Activities Synchronization and Functional Replication in BPEL4WS.

Promoter: Prof. Dr. Theo D'Hondt.

Advisor: Prof. Dr. Johan Fabry.

Vrije Universiteit Brussel. August 2006.

Engineering thesis

Analysis, Design and Implementation of a Code Generator System for the Interpretation of Distinct Call Detail Records (CDRs) Formats.

Promoter: Dr. Xavier Ochoa. Escuela Superior Politécnica del Litoral. December 2004.

This software was conceived as the initial module of a complex Convergent Mediation system, and was successfully deployed in an Ecuadorian Telecom company. The main technologies involved in the system were Java and XML related specifications.

Score: (10/10)

Additional Activities During Academic Life

During Doctoral training

Student volunteer chair at the International Conference on Aspect-Oriented Software Development (AOSD 2008). Brussels, Belgium.

Co-organization chair of the following academic events:

- Seminar on Advanced Tools & Techniques for Software Evolution (SATToSE), Waulsort, Belgium. February 2008.
- BElgian-NEtherlands EVOLution Workshop (BENEVOL). Louvain-la-Neuve, Belgium. December 2009.

During my PhD I also served as a co-advisor or reader of the following master theses:

- *Implementing context-aware mobile applications through dynamic reification of a database model.* Espoir Gahungere. Université catholique de Louvain. Promotor: Prof. Kim Mens, Sergio Castro. 2013.
- *Un Outil d'Analyse de la Qualité du Code Destiné aux Étudiants de Première Année de Baccalauréat.* Nicolas Muller. Université catholique de Louvain. Promotor: Prof. Kim Mens. 2010.
- *Definition and Verification of Structural Regularities in Enterprise Java Beans Applications.* Laurent Lantsoght. Université catholique de Louvain. Promotor: Prof. Kim Mens. 2009.

During Master training

Student volunteer chair at the European Conference on Object-Oriented Programming (ECOOP 2006). Nantes, France.

During Engineering training

Teaching assistant during various semesters in the subjects of "*Data Structures*" and "*Programming Fundamentals*".

Professional Experience

From September 2008 until present I have been working as a teaching and research assistant at the Université catholique de Louvain (from 2007 to 2008 I had an academic grant and I was not an assistant). I have been in charge of assisting the teaching of the following courses: *Object-oriented design and data management* (LSINF1225), *Introduction to programming* (LSINF1161), *Computer aided problem resolution* (LSINF1151), *Software development project* (SINFINFO2255) and *Measures and Maintenance* (INGI2252) (last two were master courses).

From December 2006 to February 2007 I worked for the INTER-AMERICAN CENTER OF TAX ADMINISTRATIONS (<http://www.ciat.org/in/index.asp>) as a software consultant, in an accelerated software development program. This project consisted in the implementation of a Customs system software for the Guatemala Government (last stage of the project). Technologically, the project was related to JEE technologies and frameworks, Workflow Management and Business Document Administration.

From February 2002 to December 2004 I worked for a software outsourcing company located in Ecuador (YOVERI S.A.). Due to the nature of the company, I was involved in the design and implementation of software solutions for some Ecuadorian enterprises (mainly TELECOMS), some of them were:

LINKOTEL S.A. (from February 2004 to December 2004)

Implementation of a code generator system for the interpretation of distinct Call Detail Records (CDRs) formats. Since my employer and my university had cooperation programs, I developed this system both as part of my professional work and as my engineering thesis.

CONECEL S.A. (from October 2002 to January 2004)

Technical analysis, implementation leader and software cycle support for a CRM system based in N layers architecture. The involved technologies were: Oracle 9i Data Base and an OracleAS10G Application Server. The system was based on the JEE specification.

PACIFICTEL S.A. (from February 2002 to September 2002)

Implementation of billing applications using technologies and products related to Oracle like ORACLE DEVELOPER 6i and ORACLE DESIGNER. The work also involved the manipulation of huge volumes of data using PL/SQL programming and occasionally the development of C software modules.

Grants

I was granted with the DESAFIOS scholarship (<http://www.becadesafios.com>) for doing my EMOOSE master training. This scholarship was offered for Latin American engineers who were willing to take part in Master degree programs in Europe, and covered my academic tuition fees (10000 Euros).

During the first fifteen months of my doctoral training, I worked as a researcher on a grant on the MoVES project: "Fundamental Issues in Software Engineering: Modelling, Verification and Evolution of Software". This project is sponsored by the Belgian Science Policy (BELSPO), with the official reference number PAI P6/39.

(<http://www.belspo.be/belspo/fedra/proj.asp?l=en&COD=P6/39>).

Languages Competences

Language	Observation
<i>English</i>	Fluent (English spoken at home).
<i>Spanish</i>	Native.
<i>French</i>	Advanced reading skills. Intermediate written and oral communication.

Other Competences

Genuinely passionate and curious about software engineering research and development.
Persistence, inventiveness and imagination in solving nontrivial unstructured problems.
Well-travelled international background and used to work in a multi-cultural heterogeneous environment.

Personal Interests

In the personal side I am often enthusiastic about traveling, backpacking and seeing the world.
Interacting with new cultures and learning about different ways of perceiving the world and interpreting reality are among my most valued memories.