Curriculum Vitae - Sergio Castro

November 2018

**Professional Objective**

### Research and application of advanced software engineering techniques.

Continuous learning. Never stopping being creative.

**Personal Data**

**Last Name:** Castro

**First Name:** Sergio

**Mobile:** (++32) 4 85 93 46 59

**E-mail:** [sergioc78@gmail.com](mailto:sergioc78@gmail.com)

**Nationality:** Belgian / Ecuadorian (dual citizenship).

**Place of residence:** Brussels, Belgium.

**Research Portfolio:** <http://sergio-castro.github.com/>

**Programming Portfolio:** https://github.com/sergio-castro/

**Education**

## Post-Graduate Studies

Université catholique de Louvain (UCL) Louvain-la-Neuve – Belgium

#### PhD. in Engineering Sciences. Computer Science.

2014

Vrije Universiteit Brussel (VUB) Brussels – Belgium

Ecole des Mines de Nantes (EMN) Nantes – France (double diploma program)

**Master of Science in Computer Science**: “ *European Master in Object-, Component-, Aspect-, Oriented Software Engineering Technologies (EMOOSE)*”.

Mention: Great Distinction. 2006

Ecole des Mines de Nantes Nantes – France

#### Certificate of specialised formation in the field of Computer Science. 2006

**Engineering Studies**

Escuela Superior Politécnica del Litoral (ESPOL) Guayaquil – Ecuador

**Engineering degree** in Electricity and Computer Science. Specialisation in Information Technology Systems (ITS).

2004

**Research Work**

#### ARTICLES IN SCIENTIFIC MAGAZINES

S.CASTRO, K. MENS & P. MOURA. *Automatic Integration of Hybrid Java-Prolog Entities with Logi- cObjects*. Association for Logic Programming (ALP) Newsletter. Out of Left Field track. V. 27 N. 4. December 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 6). Elsevier North-Holland, Inc. (Under Evaluation).

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. Elsevier North-Holland, Inc. 2011.

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. Elsevier North-Holland, Inc. 2010.

#### CONFERENCES AND SYMPOSIUMS

S.CASTRO, K. MENS & P. MOURA. *Customisable Handling of Java References in Prolog Pro- grams*. Proceedings of the International Conference on Logic Programming (ICLP). Technical Com- munication. Computing Research Repository (CoRR). V. abs/1405.2693. Vienna, Austria. 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 De- clarative Languages (PADL). V. 7752. P. 26-42. Springer Berlin Heidelberg. Rome, Italy. 2013.

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 Sci- ence Society (SCCC). P. 30-39. Chilean Society of Computer Science. Iquique, Chile. 2007.

#### PUBLISHED WORKSHOP PAPERS

*S. CASTRO. LogicObjects: A Portable and Extensible Approach for Linguistic Symbiosis be- tween an Object-Oriented and a Logic Programming Language.* International Conference on Logic Programming (Doctoral Consortium)*.* Theory and Practice of Logic Programming (TPLP). Special Issue 04-05. V. 13. 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-Ori- ented Programming (ECOOP). P. 11-16. Beijing, China. 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-Ori- ented Programming (COP'12). Co-located with the European Conference in Object-Oriented Pro- gramming (ECOOP). Beijing, China. 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-Nether- lands Software Evolution Seminar (BENEVOL), Lille, France. 2010.

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). Paphos, Cyprus. 2008.

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

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). Co-located with the IEEE International Conference on Program Comprehension. (ICPC). Amsterdam, The Netherlands. 2008.

# Dissertations

## PhD thesis

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

Université catholique de Louvain, Belgium. September 2014. Promoter: Prof. Dr. Kim Mens.

## Master thesis

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

Vrije Universiteit Brussel, Belgium. August 2006.

Promoter: Prof. Dr. Theo D'Hondt. Advisor: Prof. Dr. Johan Fabry. Score: 18/20.

## Engineering thesis

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

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

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.

# Professional Experience

#### From November 2018 to the present.

#### Collibra, Belgium. *(*[*http://www.collibra.com*](http://www.collibra.com)).

#### *Role:* Backend Software Engineer.

#### From July 2015 to September 2018.

TomTom, Belgium. *(http://www.tomtom.com*). *Role:* Expert Software Engineer.

*Responsibilities:* I had the privilege to work on core components of the TomTom map making process such as Quality Assurance, Workflow Management and Model Transformations.

On top of this, I planned and organized international workshops intending to increase the collaboration between leading European research institutions and TomTom teams in distinct geographical locations.

I also actively participated in the learning & knowledge sharing efforts inside the company (organization of brown-bag sessions, tutorials, world-class invited speakers, etc) and served as a TomTom reviewer for the ITS congress (https://itsworldcongress.com/).

*Programming languages and platforms:* Java ecosystem, Hadoop, Elasticsearch, Kafka, Zookeeper, Activiti, Docker, among many others.

#### From September 2008 to September 2014

Université catholique de Louvain, Belgium. [*(h*](http://www.uclouvain.be/en-icteam.html))*t*[*tp://www.uclouvain.be/en-icteam.html*).](http://www.uclouvain.be/en-icteam.html)) *Role:* Teaching and research assistant (**from 2007 to 2008** I had an academic grant).

*Responsibilities:* Ranged from developing and supervising exercises in situ for the students to the

design and evaluation of homeworks and major projects.

The courses where I was assistant were part of the bachelor (in French) and master (in English) programs. They typically had 20 to 50 students registered.

*Covered subjects:* software metrics, logic programming, object-oriented programming design and implementation, requirements engineering, data structures and databases.

*Programming languages and platforms:* Smalltalk (Pharo and VisualWorks), Java, Android, and web development technologies.

#### From December 2006 to February 2007

Inter-American Center of Tax Administrations, Panama ([*http://www.ciat.org/in/index.asp)*.](http://www.ciat.org/in/index.asp))

*Role:* Software consultant (programmer).

*Project goal:* Last stage of the implementation of a Customs software system for the Guatemala Government. Accelerated software development program.

*Technologies involved:* the project was related to JEE technologies and frameworks, Workflow Management and Business Document Administration.

#### From February 2002 to December 2004

Yoveri S.A., Ecuador [*(h*](http://yoveri.com/))*t*[*tp://yoveri.com/*).](http://yoveri.com/))

*Role:* Due to the outsourcing nature of this Ecuadorian company, I was involved in the design and implementation of software solutions for several 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 ORA- CLE DEVELOPER 6i and ORACLE DESIGNER. The work also involved the manipulation of huge vol- umes of data using PL/SQL programming and the development of C software modules.

# Grants

DESAFIOS scholarship (http://www.becadesafios.com).

Scholarship offered to Latin American engineers to take part in Master degree programs in Europe.

*Covered:* EMOOSE master training tuition fees (10000 Euros).

Grant on the MoVES project sponsored by the Belgian Science Policy. (*http://www.belspo.be/belspo/fedra/proj.asp?l=en&COD=P6/39 ).*

*Covered:* First fifteen months of my doctoral training.

# Languages Competences

**English**: Fluent (English spoken at home).

**Spanish**: Native.

**French**: Advanced reading skills. Upper-intermediate written and oral communication. (French speaking working environment at the UCL).

# Other Competences

* Strong background in software engineering in general and object-oriented programming in particu- lar.
* Genuinely passionate and curious about software engineering research.
* Experience in several programming languages: Java, Smalltalk, Prolog, Logtalk, SQL, JavaScript. Some knowledge of Scala and previous experience (may need refreshing) in C, C++, PL/SQL.
* Quick learner of new programming languages and programming paradigms.
* Persistence, enthusiasm and imagination in solving nontrivial unstructured problems.
* Well-travelled international background and being used to work in a multi-cultural heterogeneous environment.

# Personal Interests

I am often enthusiastic about backpacking and exploring the world. Interacting with new cultures and learning about different ways of perceiving life and interpreting reality are among my most valued memories.

# References

Aart Kuijken (my former manager at TomTom)

Team Lead R&D Barco

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URL: <https://www.linkedin.com/in/aart-kuijken-3bb3305>

Ralph Roef

Principal architect at TomTom

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URL: <https://www.linkedin.com/in/ralph-roef-11667a2>

Prof. Dr. Kim Mens (PhD advisor)

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URL: <http://www.info.ucl.ac.be/~km>

Dr. Jan Wielemaker (member of my PhD jury)

SWI Prolog author

Vrije Universiteit Amsterdam

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URL: http://www.swi-prolog.org