

Mariano Martinez Peck

PhD Student, Computer Science

Address 345, rue D' Arras
Bat : A, Porte : 115
59500 Douai, France
+(33) 6 61 04 49 53

Email <mailto:marianopeck@gmail.com>

Web <http://rmod.lille.inria.fr/web/pier/team/Mariano-Martinez-Peck>

Blog <http://marianopeck.wordpress.com>

Date of Birth June 14, 1985

Citizenship Buenos Aires, Argentina

Languages Spanish (native language)
English (fluent, Cambridge FCE with B and primary language at work, in international conferences and presentations)



Research interest : Memory Footprint, Embedded Software Development, Virtual Memory, Garbage Collectors, Virtual Machines, Compilers, Reflective Systems, Programming Languages.

Employment

November 2009 – Current PhD Student in Ecole Des Mines de Douai and INRIA Lille Nord Europe included in laboratory LIFL of University of Lille (LIFL - UMR 80 22). Member of the RMoD team.

March 2009 – November 2009 Smalltalk developer at Mercap Software company.

UniTrade (8 months) - Smalltalk developer The project involved mostly maintenance of a financial product called UniTrade. *Technologies : Visual Age Smalltalk, ENVY, several RDBMS databases.*

June 2006 – March 2009 Junior - Semi-Senior Java developer - Technical Leader at Snoop Consulting company.

Gates (6 months) - Senior Java developer - Technical Leader The project involved developing an enterprise system for a company that manages containers, several ports and logistics. *Technologies : Guice, GWT, EJB3 with Hibernate, BPEL, Dozer, Oracle.*

FreeSnoopy (2 months) - Technical support This was an internal project where all the machines were migrated from the Windows platform to Linux. I was part of the team generating the bash scripts to automate the migration and installation of Linux in the different computers depending on the role of the user.

Project CallCenter (12 months) Semi senior Java developer - Technical Leader It was a complete platform to support the CallCenter of a large company. I did development, testing, maintenance and analysis. *Technologies : Hibernate, Struts, Maven 2, JXLS, JUnit, Oracle..*

Gestión de Recarga (16 months) Junior - Semi Senior Java developer - Technical Leader It was a system that allowed the user to recharge phone pulses through a website or posnet terminals. I did development and testing tasks. *Technologies : Spring, Hibernate, JSF, Tiles, Maven 2, JXLS, JDBC, JUnit, JMS, EJB(Mdb), Oracle.*

Education

2008 – 2012 PhD in Computer Science at Ecole Des Mines de Douai and Université des Sciences et Technologies de Lille 1 (USTL) – INRIA Lille Nord Europe

Title : « *Application-Level Virtual Memory for Object-Oriented Systems* »

Defense : : Expected for October, 29th.

Funding : Ecole Des Mines de Douai.

Supervisor : Prof. Stéphane Ducasse.

Co-supervisors : Dr. Noury Bouraqadi, Dr. Marcus Denker and Dr. Luc Fabresse.

2003 – 2008 Information Systems Engineer at Universidad Tecnológica Nacional - Facultad Regional Buenos Aires, Argentina. Obtained in December 2008.

Teaching

Summary

Year	Status-Site	Level	Signature	Students	Hours week	Charge
2005-2007	Teaching Assistant, Universidad Tecnológica Nacional - Facultad Regional Buenos Aires	IT university degree, Information systems engineering	Advanced Programming Techniques	50	6	theoretical lessons / practical work

Details

- *Advanced Programming Techniques* : Object oriented programming, design patterns, introspection, reflection, aspect oriented programming, UML, Unit testing, TDD, software configuration management, errors and exceptions handling.
- *tutorials / practical work* : exercises preparation and monitoring.
- Preparation, monitoring and correction of exams (excluding teaching hours).
- Participation in juries and meetings of department.

Publications

Refereed Articles in International Journals

[1] Mariano Martinez Peck and Noury Bouraqadi and Stéphane Ducasse and Luc Fabresse

Object Swapping Challenges : an Evaluation of ImageSegment.

Journal of Computer Languages, Systems and Structures, 2012.

[2] Martin Dias, Mariano Martinez Peck and Stéphane Ducasse and Gabriela Arévalo

Fuel : A Fast General Purpose Object Graph Serializer.

Software : Practice and Experience, 2012.

Workshop Papers

- [3] Martinez Peck, Mariano and Noury Bouraqadi and Marcus Denker and Stéphane Ducasse and Luc Fabresse.
Visualizing Objects and Memory Usage.
In Proceedings of Smalltalks International Workshop, 2010.
- [4] Martinez Peck, Mariano and Noury Bouraqadi and Stéphane Ducasse and Luc Fabresse.
Experiments with a Fast Object Swapper.
In Proceedings of Smalltalks International Workshop, 2010.
- [5] Martinez Peck, Mariano and Noury Bouraqadi and Marcus Denker and Stéphane Ducasse and Luc Fabresse.
Efficient Proxies in Smalltalk.
In Proceedings of IWST, 2011.
- [6] Martinez Peck, Mariano and Marin Dias and Stéphane Ducasse and Gabriela Arévalo.
Clustered Serialization with Fuel.
In Proceedings of IWST, 2011.
- [7] Martinez Peck, Mariano and Noury Bouraqadi and Marcus Denker and Stéphane Ducasse and Luc Fabresse.
Problems and Challenges when Building a Manager for Unused Objects.
In Proceedings of Smalltalks, 2011.

PhD Thesis (*in progress, defense October, 29th*)

Application-Level Virtual Memory for Object-Oriented Systems
Ecole Des Mines de Douai - INRIA Lille Nord Europe
Supervisor : Stéphane Ducasse

Divulgateion Articles and Books

- [8] Stéphane Ducasse, Mariano Martinez Peck.
Managing projects with Metacello.
Chapter in the book Pharo By Example volume 2 , 2011.
- [9] Mariano Martinez Peck, Stéphane Ducasse.
Introduction to the Pharo Virtual Machine. (in progress)
Chapter in the book Pharo By Example volume 2 , 2012.
- [10] Mariano Martinez Peck
The Smalltalk object model.
Spanish translation of the chapter in the book Pharo By Example, 2010.

Blog and Technology Diffusion

In my technical blog at <http://marianopeck.wordpress.com/>, I have published several posts that document and explain some of the knowledge I have acquired during my PhD experience and beyond. Most of this information has the intention of helping those entering the Pharo Virtual Machine world. Besides talking about the open-source projects to which I contribute, I also write about the Pharo Virtual Machine, bytcodes, compiler and several other low-level topics that I like.

Presentations

Presentations of articles at international conferences

Title	Date	Subject	Place
Smalltalks 2011	11/2011	Problems and Challenges when Building a Manager for Unused Objects. [7]	Buenos Aires (Argentina)
IWST 2011	8/2011	Clustered Serialization with Fuel. [6]	Edinburgh (Scotland)
IWST 2011	8/2011	Efficient Proxies in Smalltalk. [5]	Edinburgh (Scotland)
Smalltalks 2010	11/2010	Experiments with a Fast Object Swapper. [4]	Entre Rios (Argentina)
Smalltalks 2010	11/2010	Visualizing Objects and Memory Usage. [3]	Entre Rios (Argentina)

Other presentations and seminars

Title	Date	Subject	Place
ESUG 2012	8/2012	Fuel all the way down	Ghent (Belgium)
PharoConf 2012	4/2012	Building the Virtual Machine	Lille (France)
PharoConf 2012	4/2012	Fuel all the way down	Lille (France)
Smalltalks 2011	8/2011	Building your own Pharo images with Metacello	Buenos Aires (Argentina)
ESUG 2011	8/2011	DBXTalk : Smalltalk Relational Database Suite	Edinburgh (Scotland)
IEEE Argentina	11/2010	Web development with Seaside	Buenos Aires (Argentina)
Smalltalks 2010	11/2010	Metacello	Entre Rios (Argentina)
ESUG 2010	9/2010	Object graphs swapping	Barcelona (Spain)
ESUG 2010	9/2010	Metacello	Barcelona (Spain)
Southworks (company)	4/2010	Smalltalk in enterprise systems	Buenos Aires (Argentina)
ESUG 2009	9/2009	SqueakDBX	Brest (France)
Smalltalks 2008	11/2008	SqueakDBX	Buenos Aires (Argentina)

Reviews and other activities

Reviews

- Reviewer for Conferences : IWST 2012

Conference organization

- Student volunteer, ESUG 2009, participants : 150

Open-Source meetings

- Camp Smalltalk London 2011.
- Several Pharo sprints in Lille (France), Brussels (Belgium), Buenos Aires (Argentina), Barcelona (Spain) and Edinburgh (Scotland).

Schools

- 03/2011 (1 week) - Deep into Smalltalk, INRIA Lille Nord Europe.

Summers of Code

- ESUG SummerTalk 2008 : I was selected and sponsored by ESUG to implement SqueakDBX.
- ESUG SummerTalk 2009 : I was selected and sponsored by ESUG to continue and extend SqueakDBX.

- Google Summer of Code 2010 : I was the GSoC administrator for the ESUG organization. ESUG was selected and 6 projects were sponsored.
- ESUG SummerTalk 2011 : I was one of the mentors of the DBXTalk team.
- ESUG SummerTalk 2011 : I was the mentor of the Fuel team.
- Google Summer of Code 2012 : I was the (non official) mentor of the Tanker project.

Awards

- ESUG 2011 Innovation Technology Awards : I presented Fuel and it won the first prize.
- ESUG 2012 Innovation Technology Awards : I presented Tanker and it got the fourth position.

Open-Source Projects

Pharo. I am one of the core developers of the Pharo Smalltalk programming language and an active member in the community. I am also involved in improving the build process of the Pharo Virtual Machine and its documentation.

<http://www.pharo-project.org/>

Marea. I am the author of Marea, an efficient application-level virtual memory for object-oriented systems. Its main goal is to release primary memory by swapping out unused yet referenced objects to secondary memory. Contrary to most virtual memory managers in which the swapping unit is an individual object or page, Marea considers an object *graph* as the swapping unit.

<http://rmod.lille.inria.fr/web/pier/software/Marea>

Fuel. I am the co-author of Fuel, a general-purpose object serializer based on a pickling algorithm. Fuel is extremely fast, it can serialize any type of object and it does not require specific VM support.

<http://rmod.lille.inria.fr/web/pier/software/Fuel>

Tanker. I am the co-author of Tanker, a tool to export and import packages of code in a binary way using Fuel serializer. Using Fuel enables us to avoid having to compile from sources during the import.

<http://rmod.lille.inria.fr/web/pier/software/Tanker>

DBXTalk. I am one of the main developers of the DBXTalk Suite. It includes an OpenDBX plugin which allows the Smalltalk community to interact with major database engines. DBXTalk also includes an integration with the GLORP (ORM) framework, auto-generation of the mappings, and a tool to query a database and visualize the results and the database's structure or metadata.

<http://dbxtalk.smallworks.com.ar/>

OpenDBX. I contribute to OpenDBX, a lightweight but extensible database access library written in C. It provides an abstraction layer to all supported databases with a single, clean and simple interface that leads to an elegant code design automatically.

<http://www.linuxnetworks.de/doc/index.php/OpenDBX>

References

Prof. Stéphane Ducasse Research Director

Head of the RMOD Group

Scientific Officer of the INRIA Lille Research Centre - Nord Europe, France

Web : <http://stephane.ducasse.free.fr>

Noury Bouraqadi

Research director at Ecole des Mines de Douai

Director of computer science research team

noury.bouraqadi@mines-douai.fr