

## Europass Curriculum Vitae



### Personal information

Surname(s) / First name(s)

**Vilaça, Ricardo**

Address(es)

Travessa da Serra, nº 2, São Julião de Paços, 4700-770 Braga, Portugal

Telephone(s)

936797028

Email(s)

rmpvilaca@gmail.com

Nationality(-ies)

Portuguese

Date of birth

14/02/1982

Gender

Male

### Education and Training

2007-Current

Ph.D

School

Universidade do Minho

Professional Area

MAP-i Doctoral Programme. MAP-I is a joint venture of Universidade do Minho, Universidade de Aveiro and Universidade do Porto (MAP), three top Portuguese Universities

Thesis

Large-Scale Decentralized Object Store

Supervisor

Rui Oliveira

Brief description

We envision a large scale, dependable, fully decentralized object store. The target is a large computing network composed of tens to hundreds of non dedicated nodes connected through typical local area links. Over this network, we intend to design and prototype a general purpose peer-to-peer object store that seamlessly fragments and replicates application objects aiming at providing a dependable massive storage with in-place processing capabilities. The system should be capable to leverage replication to balance read scalability and fault tolerance.

2000-2005

Computer Science and Systems Engineering

School

Universidade do Minho – Department of Informatics

Professional Area

Specialization in Information Technologies

Student Number

33223

Average Grade

17

1997-2000

High School

School

Escola Secundária de Maximinos

Área

Agrupamento 1- Científico Natural – Geral

**Teaching Experience**

- 2009-2010 Professor of classroom practice of EISD, Distributed Systems, Universidade do Minho
- 2008-2009 Professor of classroom practice of EISD, Distributed Systems, Universidade do Minho
- 2009 Supervisor of a Bolsa de Integração à Investigação with title "Benchmarking sistemas de armazenamento baseados em objectos"

**Research Interests**

Distributed Systems, Database Replication, Cloud Computing Storage, Peer-to-Peer

**Publications**

- 2011 Ricardo Vilaça, Rui Carlos Oliveira, and José Pereira. A correlation-aware data placement strategy for key-value stores. In *DAIS*, pages 214–227, 2011
- 2011 Miguel Matos, Ricardo Vilaca, José Pereira, and Rui Oliveira. An epidemic approach to dependable key-value substrates (to appear). In *International Workshop on Dependability of Clouds, Data Centers and Virtual Computing Environments (DCDV 2011)*, June 2011
- 2010 Ricardo Vilaça, Francisco Cruz, and Rui Oliveira. On the expressiveness and trade-offs of large scale tuple stores. In Robert Meersman, Tharam Dillon, and Pilar Herrero, editors, *On the Move to Meaningful Internet Systems, OTM 2010*, volume 6427 of *Lecture Notes in Computer Science*, pages 727–744. Springer Berlin / Heidelberg, 2010
- 2009 Ricardo Vilaca, José Orlando Pereira, Rui Carlos Oliveira, José Enrique Armendariz-Inigo, and José Ramón de Mendivil. On the cost of database clusters reconfiguration. In *SRDS '09: Proceedings of the 2009 28th IEEE International Symposium on Reliable Distributed Systems*, pages 259–267, Washington, DC, USA, September 2009. IEEE Computer Society
- 2009 Ricardo Vilaça and Rui Oliveira. Clouder: a flexible large scale decentralized object store: architecture overview. In *WDDDM '09: Proceedings of the Third Workshop on Dependable Distributed Data Management*, pages 25–28, New York, NY, USA, 2009. ACM
- 2007 Afrânio Correia Jr., José Pereira, Luís Rodrigues, Nuno Carvalho, Ricardo Vilaça, Rui Oliveira, and Susana Guedes. Gorda: An open architecture for database replication. In *NCA*, pages 287–290, 2007

**Conference Reviews**

SRDS - IEEE Symposium on Reliable Distributed Systems  
 LADC - Latin-American Symposium on Dependable Computing  
 DAIS - IFIP International conference on Distributed Applications and Interoperable Systems  
 MW4SOC - Workshop on Middleware for Service Oriented Computing

**Event Organization**

- 2010 Help on organizing INForum 2010
- 2010 Organization of the 1º Annual meeting of EDP10C 2010
- 2010 Founder of EDP10C, Grupo de Portugueses estudantes de Doutoramento em Ciências da Computação
- 2009 Help on organizing DAIS 2009

2007-2009	Member of the direction of the University of Minho ACM Student SIGPLAN Chapter
2008	Organizing committee, JOIN + JOBSHOP 2008
2007	Organizing Committee, 2nd Summer School on Generative and Transformational Techniques in Software Engineering (GTTSE 2007), 2 - 7 July, 2007, Braga, Portugal, <a href="http://wiki.di.uminho.pt/twiki/bin/view/Events/GTTSE2007/WebHome">http://wiki.di.uminho.pt/twiki/bin/view/Events/GTTSE2007/WebHome</a>

## Event Participation

OTM 2010	OnTheMove federated conferences and workshops - <a href="http://www.onthemove-conferences.org/">http://www.onthemove-conferences.org/</a>
INForum 2010	Simpósio de Informática - <a href="http://inforum.org.pt/INForum2010">http://inforum.org.pt/INForum2010</a>
SRDS 2009	IEEE Symposium on Reliable Distributed Systems - <a href="http://www.cse.buffalo.edu/srds2009/">http://www.cse.buffalo.edu/srds2009/</a>
DSN 2009	IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) - <a href="http://2009.dsn.org/">http://2009.dsn.org/</a>
EuroSys 2009	ACM EuroSys Conference <a href="http://eurosyst2009.informatik.uni-erlangen.de">http://eurosyst2009.informatik.uni-erlangen.de</a>
HTDC 2009	Winter School: Hot Topics in Distributed Computing - <a href="http://proton.inrialpes.fr/~quema/htdc2009/">http://proton.inrialpes.fr/~quema/htdc2009/</a>
JOIN 2008	Jornadas de Informática e JOBSHOP 2008 <a href="http://di.uminho.pt/jornadas/join08">http://di.uminho.pt/jornadas/join08</a>
JOIN 2004	3D Animation, Scripting Languages, Search on the Internet, Artificial Intelligence, UMTS
Workshop WCT08	Oracle 9i Application Server and Oracle Discoverer.
JOIN 2003	Open Source, Data Mining, Programming platforms and Paradigms, Mobile Computing.
Jornadas da LESI 2002	Systems, Security and Mobility

## Work Experience

Date	November 2005 – March 2008
Employer	Computer Science and Technology Center (CCTC) – University of Minho
Occupation	Software Engineer and Researcher
Main activities and responsibilities	I worked in the scope of the IST FP6 project "GORDA - Open Replication of Databases" on the design, development and assessment of online recovery protocols for replicated databases and contributing to the middleware implementation of the GORDA project.
Date	March 2005 - October 2005
Employer	PT Inovação
Occupation	Internship
Type of business or sector	Telecommunications and Information Technology
Main activities and responsibilities	I worked in the research project shIPnet (Service Handling on IP networks). This project aims at defining the new standard architectural framework for supporting the PT Inovação family of products, designed to meet the challenges and needs of next generation networks (NGN) in the context of convergence of fixed and mobile systems. The architecture is based on open standards from the 3GPP IP Multimédia Subsystem (IMS). I researched on the IMS standards and design and develop a prototype for the implementation of the X-CSCF allowing to tests basic VoIP functionalities.

## Projects

Date	2010
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Title	UBlog Benchmark - <a href="https://github.com/rmpvilaca/UBlog-Benchmark">https://github.com/rmpvilaca/UBlog-Benchmark</a>
Description	UBlog is a performance evaluation toolkit that mimics the usage of the Twitter social network. The workload may be used with both key-value stores and relational databases.
Main activities and responsibilities	Design and development of the benchmark.
Technology	Java
Date	2005-2008
Title	Escada Replicator - <a href="http://escada.sourceforge.net/">http://escada.sourceforge.net/</a>
Description	ESCADA is a portable and flexible database replication system that accommodates multiple reliability, performance, and applicability tradeoffs: Target scenarios range from shared-nothing clusters to remote sites for disaster prevention. Currently supported database management systems include Apache Derby, PostgreSQL, and MySQL.
Main activities and responsibilities	Participated in the design and implementation of the recovery protocols and in the integration with the group communication toolkits.
Technology	Java, Spring, and jGCS
Date	2005-2008
Title	GAPI - <a href="https://launchpad.net/gapi">https://launchpad.net/gapi</a>
Description	The GORDA Architecture and Programming Interface (GAPI) allows portable replication protocols to be easily implemented and reused with different database management systems. It is designed to be provided either natively by the database server or by a server wrapper. The included functionality supports a variety of replication protocols, both master-slave or multi-master, synchronous or asynchronous. It should also be useful to build other data management tools. The GAPI uses reflection, as abstract transaction processing concepts appear as objects in the target data model and programming language, and is based on widely used and tested design patterns and APIs (e.g. JDBC).
Main activities and responsibilities	Participated in the design of the GAPI mainly in the recovery interfaces and In the design and implementation of the Sequoia ( <a href="http://sequoia.continuent.org/">http://sequoia.continuent.org/</a> ) GAPI implementation.
Technology	Java
Date	2006
Title	Portorama - <a href="http://portorama.portodigital.pt">http://portorama.portodigital.pt</a>
Description	Portorama is a platform for sharing photos of the city of Porto. Portorama is meant to foster a community willing to create a rich, comprehensive and truly diverse photo collection of Porto. Portorama enables you to georeference and arbitrarily tag your photos of Porto and share them across the community through a peer-to-peer network. The sets of shared photos are made available by the Portorama community and searchable by their localization, title, author and assigned tags. All photos are stored by the community in a fully decentralized manner and under the Creative Commons license.
Main activities and responsibilities	Participated in the design and implementation of UI and integration with GoogleMaps.
Technology	P2P, GoogleMaps, GWT and AppFuse
<b>Awards</b>	
2005	Governo Civil de Braga and Câmara Municipal de Braga Award (Sociedade Martins Sarmento)

2005	Engenheiro António de Almeida Award
2005	Best Engineering Student Award (Ordem dos Engenheiros)
2005	Bolsa de Estudo por Mérito
2005	Associação Industrial do Minho Award
2005	University of Minho Merit Award
2004	University of Minho Merit Award
2004	20th place at MIUP 2004 Portuguese inter-University Programming Contest
2003	University of Minho Merit Award
2003	3rd place on MIUPinho 2003 local programming contest at Department of Informatics
2002	University of Minho Merit Award
2000	Escola Secundária de Maximinos Merit Award
1999	Escola Secundária de Maximinos Merit Award
1998	Escola Secundária de Maximinos Merit Award

## Technical skill and competences

Programming Languages	C,C++,C#, Java, Visual Basic, HTML, CSS, Prolog, Haskell, Python, XML and Ruby
DataBases	SQL, Informix, MySQL, Derby, PostegreSQL, and Oracle9.0i
Web Programming	Ajax, GWT, Flex, and Ruby Rails
Model-oriented specification	UML and VDM-SL
Operating Systems	Linux, Unix, Windows 9x/NT/2000/XP and Mac OS
Cryptography	Java CE, IAİK CE provider for Java, and OpenSSL
Network protocols	IP, TCP, UDP, DNS, SNMP, Mail, and Multicast
Distributed systems	Java RMI, CORBA, Distributed Objects, Concurrent Programming, Dependability, Replication, Consensus, Group Communication, Database Replication, Peer-to-peer systems
Multimédia	OpenGL

Mother tongue(s)

**Portuguese**

*Self-assessment  
European level<sup>(\*)</sup>*

**English**

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
B2 Independent user	C1 Proficient user	B2 Independent user	C1 Proficient user	C1 Proficient user

<sup>(\*)</sup> Common European Framework of Reference (CEF) level

## Additional Information

2007-Current	Member of the social solidarity that helps homeless, Projecto SA
2008-2009	Member of Braga's local coordination team of the social solidarity project Rabo de Peixe Sabe Sonhar