

Part A. PERSONAL INFORMATION		CV date	03/10/2023
First and Family name	Ramón Doallo Biempica		
Social Security, Passport, ID number	32763225R	Age	59
Researcher codes	WoS Researcher ID (*)		
	SCOPUS Author ID(*)	35404320600	
	Open Research and Contributor ID (ORCID) **	0000-0002-6011-3387	

(*) At least one of these is mandatory (**) Mandatory

A.1. Current position

Name of University/Institution	University of A Coruña		
Department	Department of Computer Engineering		
Address and Country	Campus de Elviña s/n. 15071 A Coruña		
Phone number	881011220	E-mail	doallo@udc.es
Current position	Full Professor (Catedrático Universidad)	From	22/09/1999
Key words	High Performance Computing (HPC), parallel and distributed computing, computer architecture, Big Data, cloud computing, Geographical Information Systems (GIS)		

A.2. Education

Title	University	Year
PhD in Physics	University of Santiago de Compostela	1992
B.S. (Licenciatura) in Physics	University of Santiago de Compostela	1987

A.3. Indicators of Quality in Scientific Production

Number of "sexenios" (6-year research periods): 5 (last year of the 5th sexenio: 2017) + 1 sexenio transferencia (2019)

Thesis supervised since 2009: 10

Total number of citations: 22,668 (Google Scholar)

Average number of citations/year during the last 5 years (2018-2022): 2,274 (Google Scholar)

Total number of publications in the first quartile (Q1): 30 + (34 Q2)

h-index: 30 (Google Scholar) **i-10 index:** 94 (Google Scholar)

See <https://scholar.google.es/citations?user=xO3xcX8AAAAJ&hl=es>

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Ramón Doallo received a B.S. in Physics in 1987 (Best Student Record Award) and a Ph.D. in Physics in 1992, both at the University of Santiago de Compostela. He completed his education through research visits to Siemens AG Labs in Munchen (1992) and to the Dep. of Computer Science of the University of Illinois at Urbana-Champaign (1995-1997). He has been teaching at the Faculty of Informatics of the University of A Coruña (UDC) since 1990 and was promoted to the position of Full Professor in 1999. From 1994 till 2017 he led the Computer Architecture Group at UDC.

His main research area is High Performance Computing (HPC). He has 30 years of research experience in topics of computer architecture, supercomputing, parallel and distributed computing, cloud computing, Big Data processing, and geographical information systems. He has published in these fields more than 200 papers in international journals and conferences, and has also supervised **13 Ph.D. Theses**. His publications include **97 papers in JCR journals** (e.g., IEEE Computer, IEEE TC, IEEE TPDS, IEEE TCOM, IEEE TII, ACM TOMS, ACM TACO, ACM TOPLAS, FGCS, PARCO...), 65 of them in the last 10 years, as well as



numerous works in prestigious conferences in his research area (e.g., HPCA, MICRO, PACT, SIGMETRICS, IPDPS, ICS...). As of October 2019 his publications have received a total of **17,548 citations in Google Scholar**.

Prof. Doallo has participated in more than **140 national and international R&D actions** (projects, contracts and networks), in **79 of them as PI**. Out of the 140 R&D actions, **64 correspond to contracts with companies and public administrations**. In 2013 he participated as a promoter partner in the **start-up Torus Software Solutions** to commercialize research results of high performance computing, Big Data and cloud computing. This company has obtained **18 entrepreneurship awards**. Prof. Doallo is also coauthor of one US patent (exploited by Torus) and has registered 13 software products in the IP Office.

Regarding his experience in the evaluation of research projects and other programs, the following positions stand out: member of the Advisory Committee on Communications, Computing and Electronics Engineering within the CNEAI between 2006 and 2008; evaluator of research projects for ANEP since 2007; member of the ANEP Commission for the selection of projects of the R&D Spanish National Plan (TIN area) in 2011, 2014 and 2015; evaluator in 2013 of research projects for the FP7-ICT-2013-10 call within the VII Framework Program of the EU; expert reviewer of results of European research projects since 2013. From January 2017 to September 2019, he was associated to the TIN Area Manager of the AEI (Spanish Research Agency) to monitor and evaluate research programs.

Prof. Doallo has served in the Program Committee of 34 international conferences, and he has been the Chair of the Organizing Committee of the 12th Euromicro Conference on Parallel, Distributed and Network-based Processing, the 12th Workshop on Compilers for Parallel Computers, the 1st Iberian Grid Infrastructure Conference, the Workshop on Exploitation of Hardware Accelerators in 2010 and 2011, and the Workshop on Multicore Cache Hierarchies: Design and Programmability Issues in 2012.

Since September 2015 Prof. Doallo is a Full Member of the **Royal Galician Academy of Sciences**. In 2018, was distinguished with the **Aritmel National Award in Computer Science**, promoted by the Spanish Scientific Society of Computer Science (SCIE) and BBVA Foundation. In 2020 the **start-up Torus Software Solutions**, where participates as a co-founder and partner, has been distinguished with the **Ramón Llull National Award in Computer Science**, promoted also by the Spanish Scientific Society of Computer Science (SCIE) and BBVA Foundation, in order to recognise the activity of a start-up participated also by the University.

Part C. RELEVANT MERITS

C.1. Publications (10 selected papers)

1. P. González, R.R. Osorio, X.C. Pardo, J.R. Banga, R. Doallo. An efficient ant colony optimization framework for HPC environments. Applied Soft Computing, 114:108058, 2022. **JCR/Q1**
2. J. Fernández-Fabeiro, D. Andrade, B.B. Fraguera, **R. Doallo**. An automatic optimizer for heterogeneous devices. Future Generation Computer Systems 106, 572-584, 2020. **JCR/Q1**
3. A.P. Diéguez, M. Amor, **R. Doallo**. Tree Partitioning Reduction: A New Parallel Partition Method for Solving Tridiagonal Systems. ACM Transactions on Mathematical Software, 45(3), Article no. 31, 2019. **JCR/Q1**
4. D. Deibe, M. Amor, **R. Doallo**. Supporting Multi-resolution Out-of-core Rendering of Massive LiDAR Point Clouds through Non-redundant Data Structures. International Journal of Geographical Information Science, 33(3): 593-617, 2019. **JCR/Q1**
5. A.P. Diéguez, M. Amor, J. Lobeiras, **R. Doallo**. Solving Large Problem Sizes of Index-Digit Algorithms on GPU: FFT and Tridiagonal System Solvers. IEEE Transactions on Computers, 67(1):86-101, 2018. **JCR/Q1**



6. J. Lobeiras, M. Amor, **R. Doallo**. Designing Efficient Index-Digit Algorithms for CUDA GPU Architectures. IEEE Transactions on Parallel and Distributed Systems, 27(5):1331-1343, 2016. **JCR/Q1**
7. D.R. Penas, J.R. Banga, P. González, **R. Doallo**. Enhanced Parallel Differential Evolution Algorithm for Problems in Computational Systems Biology. Applied Soft Computing, 33:86-99, 2015. **JCR/Q1**
8. R.R. Expósito, G.L. Taboada, S. Ramos, J. Touriño, **R. Doallo**. Performance Analysis of HPC Applications in the Cloud. Future Generation Computer Systems, 29(1):218-229, 2013. **JCR/Q1**
9. D. Andrade, B.B. Fraguera, **R. Doallo**. Accurate prediction of the behavior of multithreaded applications in shared caches. Parallel Computing, 39(1): 36-57, 2013. **JCR/Q1**
10. D. Darriba, G.L. Taboada, **R. Doallo**, D. Posada. jModelTest2: More Models, New Heuristics and Parallel Computing. Nature Methods, 9(8):772, 2012. **JCR/Q1**

C.2. Research Projects and Grants (5 selected ones)

1. Architectures, Frameworks and Applications in High Performance Computing (Ministry of Science and Innovation of Spain, ref. PID2022-136465NB-I00). PIs: Juan Touriño and Gabriel Rodríguez. Role: one of the 20 researchers of the project. September 2023-August 2026, 405.000€
2. NExt ApplicationS of Quantum Computing, NEASQC. (Horizon 2020 Programme, Call H2020-FETFLAG-2020-01 - FET Flagships, Complementary call on Quantum Computing -, ref. 951821). Participant (UDC partnership): **Ramón Doallo**. 01/09/2020-31/08/2024.
3. New Challenges in High Performance Computing: Architectures, Software and Applications. (Ministry of Science and Innovation of Spain, ref. TIN2019-104184RB-I00). PIs: Juan Touriño and **Ramón Doallo**. 01/06/2020-30/05/2023, 332.145€
4. New Challenges in High Performance Computing: from Architectures to Applications II (Ministry of Economy, Industry and Competitiveness of Spain, ref. TIN2016-75845-P). PIs: **Ramón Doallo** and Juan Touriño. 30/12/2016-29/12/2019, 379.577€
5. Factories of the Future Resources, Technology, Infrastructure and Services for Simulation and Modelling, FORTISSIMO (EU 7th Framework Programme, ref. 609029), Experiment "Improved and Optimized Design of High Temperature Exhaust Gases Concentric Chimneys". PI of the experiment (UDC partner): Basilio B. Fraguera. Role: one of the 4 researchers of the project. 01/10/2014-31/03/2016. 49.980€ (UDC partner)

C.3. Contracts (5 selected ones)

1. Development of a Service for New Functionalities, Support and Management of the Information System for the Management of the Land Bank of Galicia, R&D contract funded by the Agency for the Technological Modernization of Galicia (AMTEGA, Xunta de Galicia). PIs: **Ramón Doallo** and Juan Touriño. October 2020-May 2024, 574,082€
2. Analysis of Event-driven MapReduce Frameworks for their Application to Industry 4.0 and Smart Cities Scopes, R&D contract funded by Torus Software Solutions S.L., ref. INV11218. PIs: Juan Touriño and **Ramón Doallo**. 03/12/2018-31/07/2019, 19.360€
3. Development of New Functionalities in the Information System for the Management of the Land Bank SITEGAL, R&D contract funded by the Agency for the Technological Modernization of Galicia (AMTEGA, Xunta de Galicia), ref. INV06616. PIs: **Ramón Doallo** and Juan Touriño. 08/10/2016-07/10/2020, 640.970€
4. HPC4HPT: High Performance Computing for High Performance Trading, R&D contract funded by the Barrié Foundation (Fund for Investment on Science). PIs: Juan Touriño, **Ramón Doallo** and Guillermo L. Taboada. 22/07/2011-30/09/2015, 340.000€
5. Improving UPC Usability and Performance in Constellation Systems: Implementation/Extension of UPC Libraries, R&D contract funded by Hewlett-Packard. PI: **Ramón Doallo**. 01/05/2008-30/04/2011. 153.459€



C.4. Patents and other IP registry (5 selected ones)

1. M. Amor, D. Deibe, **R. Doallo**. VILMA: Visualization for LiDAR Data Using a Multi-resolution Approach. Software registered in the IP Office, nº 03/2019/227, 19/11/2018. Holder entity: UDC
3. M. Amor, A.P. Diéguez, **R. Doallo**, J. Lobeiras. BPLG - A Tuned Butterfly Processing Library for GPU Architecture. Software registered in the IP Office, nº 03/2016/1053, 28/06/2016. Holder entity: UDC
4. M. Amor, D. Deibe, **R. Doallo**, D. Miranda, M. Cordero, R. Crecente. VGLiDAR 1.0 Galician Viewer of LiDAR Data. Software registered in the IP Office, nº: 03/2016/51, 23/11/2015. Holder entity: UDC
6. G.L. Taboada, J. Touriño, **R. Doallo**. Method and Middleware for Efficient Messaging on Clusters of Multi-core Processors. USPTO Patent nº 8839267, 16/09/2014 (renewed on 27/12/2017). Priority Country: USA. Holder entity: UDC. Exploited by the start-up Torus Software Solutions through a Technology Transfer Contract UDC-Torus
7. **R. Doallo**, J. Touriño, G.L. Taboada, S. Ramos, R.R. Expósito. FastMPJ (Fast Message Passing in Java). Software registered in the IP Office, nº 03/2013/966, 03/05/2013. Holder entity: UDC. Exploited by Torus through the same Technology Transfer Contract mentioned above

C.5. Technology Transfer: Creation of Start-ups

Co-founder and partner of the start-up **Torus Software Solutions S.L.** (participated by UDC), since April 2013 (<http://torusware.com>, CIF B70368907)

C.6. Management of R&D

1. Collaborator of the AEI (Spanish Research Agency) in the ITC field to monitor and evaluate research programs, 2017-2019
2. External Committee member for the Agencia Valenciana de Evaluación y Prospectiva (AVAP) for evaluation of Master degrees, 2018
3. Member of the Expert Panel of the ACADEMIA Program (National Accreditation), ANECA, 2008-2016
4. Member of the Selection Committee of Research Projects for the Spanish R&D Plan, ANEP (currently AEI), 2011, 2014 and 2015
5. Member of the Evaluation Committee of postdoctoral Ramón y Cajal Contracts (Computer Science Area), Ministry of Economy and Competitiveness, 2013
6. Reviewer of projects and other research actions for the European Union, since 2013
7. Reviewer of projects and other research actions of the Spanish R&D Program, ANEP (currently AEI), since 2007

C.7. Awards

1. Full Member of the **Royal Galician Academy of Sciences** since September 2015.
2. Aritmel **National Award in Computer Science**, within the 2018 National Computer Science Awards promoted by the Spanish Scientific Society of Computer Science (SCIE) and BBVA Foundation, October 2018.
3. Ramón Llull **National Award in Computer Science** to the start-up Torus Software Solutions (where he serves as co-founder and partner), within the 2020 National Computer Science Awards promoted by the Spanish Scientific Society of Computer Science (SCIE) and BBVA Foundation, October 2020.