

CURRICULUM VITAE ·

JORDI GARCIA ALMIÑANA

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PERSONAL DATA



November 2011. Source: Jordi Garcia

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Data and place of birth: August 30, 1968. In Barcelona, Spain

Position: Associate Professor

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SUMMARY

MANAGEMENT POSITIONS AT UPC

- **Rector's Delegate** of the UPC BarcelonaTech at the SINO-Spanish Campus at Tongji University, Shanghai, China. **Co-Director** of the SSC at Tongji University, March 2015 to September 2016.

Main responsibilities: Promoting and coordinating the UPC BarcelonaTech research and academic activities in China, in general, and at the Tongji University, in particular.

- **Academic Director** of the Center of Cooperation for Development at the UPC BarcelonaTech, from January 2011 to 2013.

Main responsibilities: Promoting and coordinating the education in university cooperation for development in all degree and master programs of the UPC BarcelonaTech.

- **Vice-dean Head of Studies** of the Barcelona School of Informatics at the UPC BarcelonaTech, from June 2004 to June 2010.

Main responsibilities: Management of the computer science curricula. Responsible for the adaption of the computer science curricula to the EHEA (two awards for innovation).

- **Vice-dean of University Extension** of the Barcelona School of Informatics at the UPC BarcelonaTech, from November 2001 to June 2004.

Main responsibilities: Responsible of promoting the computer science degree among future students and society. Responsible of students' associations and external activities.

TEACHING RESPONSIBILITIES

- More than 25 years (1992-present) of teaching experience at different university levels (undergraduate, graduate and postgraduate) at the UPC BarcelonaTech, using different learning methodologies, such as project based learning, case studies, and e-learning, among others.
- Constantly involved in education innovation projects and using the latest technology. More than 40 academic national and international publications in journals, conferences and book chapters in education and innovation areas. **Two awards** for innovation in education.
- Teaching responsibilities in the areas of:
 - Parallel systems, distributed systems, smart cities technology, operating systems, computer structure, and computer fundamentals, since 1992.
 - Mobile devices technology and operating systems, postgraduate course, as part of the Mobile Business & Apps Design Master Degree (2012 to 2017).
 - Information and communication technologies for development, MsC course (2011 to 2015). Information technology projects in developing countries (2005 to 2010).
 - Parallel and distributed computing using Java, PhD course (2001 and 2002).
- International teaching experience in non-native language:
 - [English]: Data driven design, in the Barcelona Masters' Degree in Design (UPC BarcelonaTech), since 2017. Computer architecture and operating systems, in the Video Games Degree (UPC BarcelonaTech), since 2015. Parallel systems, in the Informatics Engineering Degree (UPC BarcelonaTech, 2014-2015). Operating systems project, in the MsC in Information Technology (UPC BarcelonaTech, 2012-2013).

- [English] Advanced operating systems and network programming, in the MSc in Network Centered Computing (University of Reading, UK), from 2003 to 2011.
- [French]: Université Polytechnique de Bobo-Dioulasso (Burkina Faso, West Africa), from 2004 to 2011, in several operating systems and computer architecture courses.
- On-line consultant at the *Universitat Oberta de Catalunya* open university, teaching courses of computer fundamentals, since 1997. Wide experience in the use of on-line methodologies and tools for virtual and autonomous learning.
- More than 60 final degree projects advised at the engineering and master levels.

A complete list of publications and taught courses can be found at the end of this doc

RESEARCH HIGHLIGHTS

- More than 25 years (1991-current) of research experience in different areas of the computing technology. **Current research: Smart cities technology, data management for smart cities, resources management for smart cities, and optimization of big data processing.** Also interested in massively parallel processors optimization, multiprocessor memory optimization, run-time optimization (Oracle's JVM and Microsoft's .NET framework) for parallel execution, cooperation between the operating system (linux) and the run-time environment, operating system optimization for mobile devices.
- Participation in several research contracts with Huawei Technologies (USA), Microsoft Ltd. (UK), Convex Supercomputer Corporation (Dallas, TX), COMETT University Enterprises Partnership (EU), ESPRIT LTR (EU), and CICYT (Spanish Government). Project leader in two research contracts with Microsoft Ltd., UK. Participation in several research projects: EU H2020, CICYT and the MEC, both from the Spanish Government, and the AGAUR, Catalan Government. Participation in Spanish-Austrian and Spanish-British ministerial integrated actions for research.
- More than 100 national and international publications in conference proceedings, indexed journals, book chapters, and conferences by invitation. Support in the organization of multiple conferences, General Chair in JENUI 2009, Barcelona. Publication Chair in MedHocNet 2016, Web Chair in IWQoS 2017.
- Guest Editor: Electronics MDPI open access journal (ISSN 2079-9292) Special Issue "Resource Management in Cloud/Edge Computing". Mathematics MDPI open access journal (ISSN 2227-7390) Special Issue "Supercomputing and Mathematics".
- Keynote speaker, 1st International Conference on Computational Sciences and Technologies (INCCST 2019), Jamshoro, Pakistan. 10-12 April 2019. Conference title: *Smat Data for Big Cities*.
- PhD advisor in the Department of Computer Architecture at the UPC BarcelonaTech. In 2020, thesis title: *Adaptive Learning-based Resource Management Strategy in Fog-to-Cloud*, by Souvik Sengupta. In 2017, thesis title: *Hierarchical Distributed Fog-to-Cloud Data Management in Smart Cities*, by Amir Sinaeepourfard. In 2006, thesis title: *Java applications performance improvement through OS and JVM cooperation*, by Yolanda Becerra.
- Research stays (at least 3 months) at international universities or research centers: Tongji University (Shanghai, China, accumulated 15 weeks within the period from June 2015 to September 2016), Beijing Institute of Technology (Beijing, China, April-June 2013), University of Massachusetts (MA, June-August 1998), Rice University (TX, June-August 1994).

CURRENT RESEARCH (2015-PRESENT): DATA MANAGEMENT / SMART CITIES TECH

Work supported by several EU H2020 research projects and the Spanish Government.

Design and definition of a global distributed data management architecture for smart cities, through a Fog-to-Cloud (F2C) resources management framework. Considering all data lifecycle stages, from creation to consumption, including data preservation. Effective data collection and storage for efficient real-time data access and Big Data processing. Several papers published in international conference proceedings and journals. Two PhD theses advised.

PREVIOUS RESEARCH

- **(1992-1998): Optimization for massively parallel multiprocessors**

Work developed as part of my PhD degree, partially funded through research contracts with Convex Supercomputing Corporation (Dallas, TX), COMETT University Enterprises Partnership, and research projects with University of Vienna, Austria, and Queen's University of Belfast, UK.

Development of an automatic parallelization tool for sequentially written computational intensive programs. Main contributions: optimal parallelization strategy (whole problem modeled at compile time and solved using linear 0-1 integer technologies). More than 20 papers published in international conference proceedings and journals.

- **(1997-2000): Multiprocessor memory hierarchy optimization**

Work developed under research contracts with ESPRIT LTR, EU, and research projects with CICYT, Spanish Government. As a continuation of the previous research, the distributed memory supercomputers optimization is extended to heterogeneous memory multiprocessors. This work was part of an integral project to analyze and optimize any memory hierarchy level.

- **(2000-2004): Run-time optimization for parallel execution**

Work developed under research contracts with Microsoft Research LTD, UK (project leader), research projects with CICYT, and in cooperation with the *Instituto Politécnico Nacional*, Mexico. Implementation of thread scheduling optimization algorithms and run-time automatic parallelization techniques, in the JVM and the CLR Microsoft's virtual machine for C# code.

- **(2003-2006): Operating system and run-time cooperation**

Work developed under research projects with CICYT, Spanish Government. Implementation of a memory optimization mechanism to execute Java applications with high demands of memory usage. Main contribution: optimization inside the operating system (Linux kernel) in cooperation with the JVM. Several international publications and one PhD thesis advised.

A complete list of publications in conference proceedings and journals can be found at the end of this doc

SUSTAINABILITY ACTIVITIES

- Special mention award in the 1st European award for best practices for the integration of Sustainable Human Development into technology and engineering education, in 2013.
- Academic coordinator of Sustainability skill in the Institute of Education Sciences, since 2012.
- Academic coordinator of the "Sustainability and Social Commitment" generic skill in the computer science degree of the Barcelona School of Informatics, from 2011 to 2015.
- Member of the Academic Committee responsible for the master degree in Science and Technology of Sustainability, since 2012.

- Leader of several research projects to integrate sustainability into the computer science curricula. Several publications in journals and national and international conferences.

COOPERATION ACTIVITIES AND PROJECTS

- Academic Director in the Center of Cooperation for Development (CCD) at the UPC BarcelonaTech, from 2011 to 2013. Council Member of the CCD, since 2010.
- Member of the Academic Committee responsible for the master degree in Technology for Human Development and Cooperation, since 2012. Member of the Academic Committee in the Catalonia-Africa Institute, representing the UPC BarcelonaTech, since 2007.
- Responsible for the UPC selection committee's volunteer program to the UN Millennium Development Goals, United Nations Development Program, from 2004 to 2010.
- Responsible of the cooperation project Teaching Support in the *École Supérieure d'Informatique* at the *Université Polytechnique de Bobo-Dioulasso*, in Burkina Faso (West Africa), 2004-2017.
- Responsible of the cooperation project *Sourires d'Afrique*, for creating a community IT-based learning center for street children, in Burkina Faso (West Africa). **NGO founder and president.**
- Development group member of LabDoo project (www.labdoo.org), a social network to manage, re-use and distribute laptops, operating all over the world, since 2011.
- Participation in cooperation projects operating in Morocco, Guatemala, Cameroon and Senegal.

ACADEMIC DEGREES

- PhD in Computer Science from the Department of Computer Architecture at the *Universitat Politècnica de Catalunya* (UPC BarcelonaTech) with the thesis Automatic Data Distribution for Massively Parallel Processors. Advisor: Eduard Ayguadé. April 16th, 1997, graded **Cum Laude**.

Available as a research report UPC–DAC–97–63 and UPC–CEPBA–97–21. Available on-line through the doctoral thesis repository (TDX) at <http://www.tdx.cat/TDX-0207105-110918>
- MSc in Computer Science from the Barcelona School of Informatics, at the *Universitat Politècnica de Catalunya* (UPC BarcelonaTech), in 1991.

AWARDS

Member of the group that leaded the integration of sustainability into the computer science curricula and the definition of sustainability in the final degree projects:

- Special mention award in the 1st European award for best practices for the integration of Sustainable Human Development into technology and engineering education, in 2013.

Member of the group that leaded the design and implementation of the new computer science engineering curricula in order to adapt them to the European Higher Education Area (EHEA):

- Jaume Vicens Vives distinction, from the Catalan Government, a proposal of the Department of Universities, Research and Information Society (DURSI). July 2005.
- Award for quality in university teaching, 8th edition, from the *Universitat Politècnica de Catalunya* (UPC BarcelonaTech), a proposal of the UPC's Social Council. July 2005.

ANNEXES ·

LIST OF RESEARCH PROJECTS AND CONTRACTS

LIST OF PUBLICATIONS

LIST OF COURSES TAUGHT

SUPPORT IN THE ORGANIZATION OF EVENTS

LIST OF RESEARCH PROJECTS AND CONTRACTS

RESEARCH CONTRACTS

- EU HORIZON Research and Innovation Action, grant agreement No. 101070177, Sept. 2022-Aug. 2025.
 - **ICOS: Towards a Functional Continuum Operating System**
- EU Horizon 2020 Research and Innovation Program, H2020-952644, Sept. 2020-Aug. 2023.
 - **Fishy: A coordinated framework for cyber resilient supply chain systems over complex ICT infrastructures**
- Huawei Technologies, Santa Clara, CA(USA). Research contract, October 2018-October 2019.
 - **The Progressive Mapping System**
- EU Horizon 2020 Research and Innovation Program, H2020-730929, Jan. 2017-Dec. 2019.
 - **mF2C: Towards an Open, Secure, Decentralized and Coordinated Fog-to-Cloud Management Ecosystem**
- EU Horizon 2020 Research and Innovation Program, H2020-700378, May 2016-April 2019.
 - **CIPSEC: Enhancing Critical Infrastructure Protection with innovative SECURITY framework**
- Microsoft Research contract No. 2003-241. Microsoft Research Ltd, UK. June 2003-June 2004.
 - Automatic Optimizations for Computing Intensive Applications in the .NET Framework
 - Project leader: Jordi Garcia.
- Microsoft Research contract No. 2003-226. Microsoft Research Ltd, UK. June 2003-June 2004.
 - A Study of Microsoft Embedded Systems
 - Project leader: Jordi Garcia.
- ESPRIT Long Term Research, LTR 24942, European Union. December 1997-November 2000.
 - MHAOTEU: Memory Hierarchy Analysis and Optimization Tools for the End-User
- CONVEX Computer Corporation, Dallas, TX (USA). November 1994-October 1995.
 - Integrating Data and Work Distribution in the Exemplar Systems
- COMETT ACT-UETP University Enterprises Training Partnership, European Union. Sept 1994-December 1995.
 - Training in Advanced Computing Applications, Tools and Architectures
- COMETT ACT-UETP University Enterprises Training Partnership, European Union. December 1992-September 1994.
 - Advanced Computer Training and Technology Transfer
- CONVEX Computer Corporation, Dallas, TX (USA). November 1992-October 1994.
 - Automatic Data Distribution for the CONVEX SPP

RESEARCH PROJECTS

- Spanish National Plan for Scientific and Technical Research and Innovation, Spanish Government. September 2022-August 2025.
 - **HOOK: EnricHed clOud cOntinuum orchestration strategy: Key OS functionalities development**
- Spanish National Plan for Scientific and Technical Research and Innovation, RED2018-102585-T, Spanish Government. January 2020-December 2022.
 - **Go2Edge: Engineering future secure edge computing networks, systems and services**
- Spanish National Plan for Scientific and Technical Research and Innovation, TEC2015-66220-R, Spanish Government. January 2016-December 2018.
 - **GUAU: Gestión de una arquitectura cloud jerárquica para escenarios IoT: fogging cloud**
- Spanish National Plan for Scientific and Technical Research and Innovation, TEC2015-71932-REDT, Spanish Government. October 2015-September 2017.
 - Elastic Networks: Nuevos paradigmas de redes elásticas para un mundo radicalmente basado en Cloud y Fog computing
- Interministerial Commission for Science and Technology (CICYT), TEC2012-34682, Spanish Government. January 2013-December 2015.
 - Diseño de estrategias de gestión para nuevas arquitecturas de redes (Future Internet)
- Interministerial Commission for Science and Technology (CICYT), TIN2007-60625, Spanish Government. October 2007-March 2013.
 - Computación de Altas Prestaciones V.
- Interministerial Commission for Science and Technology (CICYT), TIN2004-07739-C02-01, Spanish Government. January 2005-December 2007.
 - Computación de Altas Prestaciones IV: Arquitecturas, compiladores, sistemas operativos, herramientas y aplicaciones.
- Interministerial Commission for Science and Technology (CICYT), TIC2001-0995-C02-01, Spanish Government. December 2001-December 2004.
 - Computación de Altas Prestaciones III: Arquitecturas, compiladores, sistemas operativos y aplicaciones.
- Interministerial Commission for Science and Technology (CICYT), TIC98-0511-C02-01, Spanish Government. July 1998-June 2001.
 - Computación de Altas Prestaciones II: Arquitecturas, compiladores, sistemas operativos y aplicaciones.
- Interministerial Commission for Science and Technology (CICYT) TIC98-1704-CE, Spanish Government. January 1999-November 2000.
 - Memory hierarchy analysis and optimization tools.
- Spanish-Austrian Integrated Action HU1996-0010, Ministry of Education and Science (MEC), Spanish Government. January 1997-December 1997.
 - Advanced Techniques for Automatic Data Distribution.

- Spanish-British Integrated Action 163B, Ministry of Education and Science (MEC), Spanish Government. April 1995-March 1996.
 - Automatic Data Distribution for High Performance Computers.
- Interministerial Commission for Science and Technology (CICYT), TIC95-429, Spanish Government. July 1995-June 1998.
 - Computación de Altas Prestaciones.
- Interministerial Commission for Science and Technology (CICYT), TIC92-880, Spanish Government. July 1992-June 1995.
 - Arquitectura y Compilación para Supercomputadores.

TEACHING INNOVATION PROJECTS

- Education for Development program, Center of Cooperation for Development, UPC BarcelonaTech, from 2010 to 2015.
 - Development of the Sustainability and Social Commitment skill in the Computer Science Engineering degree.
- Call for support for the improvement of teaching program. Institute of Education Sciences, UPC BarcelonaTech, 2010.
 - Implementation of professional skills in the Computer Science Engineering degree.
- Project to improve the teaching quality in the Catalan universities. Agency for Management of University and Research Grants (AGAUR), Catalan Government, 2009.
 - On-line methodologies and tools for project collaborative management.
- Project for teaching improvement, Institute of Education Sciences, UPC BarcelonaTech, 2009.
 - Methodologies and on-line tools adaption for project collaborative management.
- Project from the Institute of Sustainability, UPC BarcelonaTech, 2009.
 - The IPSO project: Incentives for academics that work in sustainability related topics.
 - Project leader.
- Project from the Institute of Sustainability, UPC BarcelonaTech, 2008-2009 and 2009-2010.
 - The STEP-FIB project, 1st and 2nd phases.
 - Project leader.
- Quality Agency for the University System of Catalonia (AQU), Catalan Government, 2007-2008. Coordinates: *Universitat Autònoma de Barcelona*.
 - Guide for professional skills evaluation in engineering and architecture final works.
- Ministry of Education and Science (MEC), Spanish Government, 2007-2008. Coordinates: *Universitat Autònoma de Barcelona*.
 - Guide for professional skills evaluation in engineering and architecture final works.
- Quality Agency for the University System of Catalonia (AQU), Catalan Government, 2007-2008. Coordinates: *Universitat Autònoma de Barcelona*.

- Guide for professional skills evaluation in the final work of engineering degree.
- Studies and analysis program oriented to the improvement of higher education, Secretary of State of Universities and Research (EA2007-0152), Ministry of Education and Science (MEC), 2007-2008. Coordinates: *Universidad Politécnica de Valencia*.
 - Analysis of academic achievement in informatics studies of Spanish universities.
- Project of the commissioner for planning and evaluation, UPC BarcelonaTech, 2007.
 - Development of the professional skills for informatics engineering degrees.
 - Project responsible.

TECHNICAL PUBLICATIONS: JOURNALS

1. Jordi Garcia, Francesc Aguiló, Adrià Asensio, Ester Simó, Marisa Zaragoza, Xavi Masip-Bruin. Data-Flow Driven Optimal Tasks Distribution for Global Heterogeneous Systems. *Future Generation Computer Systems*, Vol. 125, December 2021. Doi: 10.1016/j.future.2021.07.018.
2. Adrià Asensio, Xavi Masip-Bruin, Jordi Garcia, Sergi Sánchez-López. On the Optimality of Concurrent Container Clusters Scheduling Over Heterogeneous Smart Environments. *Future Generation Computer Systems*, Vol. 118, May 2021. Doi: 10.1016/j.future.2021.01.003.
3. Xavi Masip-Bruin, Eva Marín-Tordera, Sergi Sánchez-López, Jordi Garcia, et al. Managing the Cloud Continuum: Lessons Learnt from a Real Fog-to-Cloud Deployment. *Sensors*, Special Issue "Cloud and Edge Computing in Wireless Sensor Networks and Internet of Things", Vol. 21(9), April 2021. Doi: 10.3390/s21093159.
4. Azin Moradbeike, Kamal Jamshidi, Ali Bohlooli, Jordi Garcia, Xavi Masip-Bruin. An IIoT based ICS to Improve Safety through Fast and Accurate Hazard Detection and Differentiation. *IEEE Access*, Vol. 8, 2020. Doi: 10.1109/access.2020.3037093.
5. Souvik Sengupta, Jordi Garcia, Xavi Masip-Bruin. Essentiality of Managing the Resource Information in the Coordinated Fog-to-Cloud Paradigm. *International Journal of Communication Systems*, Vol. 33(10). Special Issue: Smart Communications for Autonomous Systems in Network Technologies. July 2020. Doi: 10.1002/dac.4286.
6. Vitor Barbosa, Xavi Masip-Bruin, Eva Marín-Tordera, Sergi Sánchez-López, Jordi Garcia, Guang-Jia Ren, Admela Jukan, Ana Juan. Towards a Proper Service Placement in Combined Fog-to-Cloud (F2C) Architectures. *Future Generation Computer Systems*, Vol. 87, October 2018. Doi: 10.1016/j.future.2018.04.042.
7. Fermín Sánchez, Antonia Soler, Carme Martín, David López, Alicia Ageno, Jose Cabré, Jordi Garcia, Joan Aranda and Karina Gibert. Competency Maps: An Effective Model to Integrate Professional Competencies across a STEM Curriculum. *Journal of Science Education and Technology (JOST)*, Vol. 27(5):448-468, 2018. Doi: 10.1007/s10956-018-9735-3.
8. Fermín Sánchez, Joan Climent, Julita Corbalán, Pau Fonseca, Jordi Garcia, José R. Herrero, Horacio Rodriguez and Maria-Ribera Sancho. A proposal to develop and assess professional skills in engineering Final Year Projects. *International Journal of Engineering Education (IJEE)*, Vol. 34(2A):1-14, 2018. ISSN: 0949-149X.
9. Eva Marín-Tordera, Xavi Masip-Bruin, Jordi Garcia, Admela Jukan, Guang-Jie Ren and Jiafeng Zhu. Do we all know what a fog node is? Current trends towards an open definition. *Computer Communications*, Vol. 109:117-130, Sep. 2017. Doi: 10.1016/j.comcom.2017.05.013.
10. Fermín Sánchez, Jordi Garcia, Eva Vidal, David López, Jose Cabré, Helena García, Marc Alier and Carme Martín. ¿Es sostenible la Estrella de la Muerte? *ReVisión*, Vol. 8(3):81-103, September 2015. ISSN: 1989-1199.
11. Fermín Sánchez, Jordi Garcia, David López, Marc Alier, Jose Cabré, Helena García and Eva Vidal. El método socrático como guía del Trabajo de Fin de Grado. *ReVisión*, Vol. 8(1):53:62, January 2015. ISSN: 1989-1199.

12. Adrián Roselló, Jordi Garcia and Jordi Ros. Dootrips: a CO₂-neutral Global Transportation System Based on Collaboration. Elsevier's Procedia Engineering, Vol. 78:124-133, 2014. ISSN: 1877-7058. Doi: 10.1016/j.proeng.2014.07.048.
13. Jordi Garcia, Helena García, David López, Fermín Sánchez, Eva Vidal, Marc Alíer and Jose Cabré. La sostenibilidad en los proyectos de ingeniería. ReVisión, Vol. 6(2):91-100, September 2013. ISSN: 1989-1199.
14. E. Valderrama, M. Rullán, F. Sánchez, J. Pons, C. Mans, F. Giné, G. Seco, L. Jiménez, E. Peig, J. Carrera, A. Moreno, J. Garcia, J. Pérez, R. Vilanova, F. Cores, J.M. Renau, J. Tejero and J. Bisbal. La Evaluación de Competencias en los Trabajos Fin de Estudios. IEEE RITA (Revista Iberoamericana de Tecnologías del Aprendizaje), Vol. 5(3):107-114, Aug. 2010. ISSN 1932-8540.
15. J. Mas, R. Alcover, A. Dapena, A. Valderruten, R. Satorre, F. Llopis, T. Rojo, R. Mayo, M. Bermejo, J. Gutiérrez, J. Garcia, E. Tovar and E. Menasalvas. Rendimiento académico de los estudios de Informática en algunos centros españoles. Novática, Num. 204:55-61, March-April 2010. ISSN 0211-2124.
16. Fermín Sánchez, Jordi Garcia, Marian Díaz, Miguel Riesco, Juan Ramón Pérez and Aquilino A. Juan. Estrategias de diseño y aspectos a considerar en los planes de EEEstudios de Grado en Ingeniería Informática. ReVisión, Vol. 1(1):6-26, June 2008. ISSN 1989-1199.
17. Jordi Garcia, Fermín Sánchez and Ricard Gavalda. Recomendaciones para el diseño de una titulación de Grado en Informática. IEEE RITA (Revista Iberoamericana de Tecnologías del Aprendizaje), Vol. 2(2):99-107, November 2007. ISSN 1932-8540.
18. Fermín Sánchez, Jordi Garcia, Ricard Gavalda, Marian Díaz, Miguel Riesco, Juan Ramón Pérez and Aquilino A. Juan. Estrategias de diseño para las titulaciones de Informática del EEES. Novática, Num. 187:45-48, May-June 2007. ISSN 0211-2124.
19. Jordi Garcia, Eduard Ayguadé, and Jesús Labarta. A Framework for Integrating Data Alignment, Distribution, and Redistribution in Distributed Memory Multiprocessors. IEEE Transactions on Parallel and Distributed Systems, Vol. 12(4):416-431, April 2001. Doi: 10.1109/71.920590.
20. Eduard Ayguadé, Jordi Garcia, and Ulrich Kremer. Tools and Techniques for Automatic Data Layout: A Case Study. Parallel Computing – Special Issue on Languages and Compilers for Parallel Computers, Vol. 24(3-4):557-578, 1998. Doi: 10.1016/S0167-8191(98)00025-8.
21. Ron H. Perrott, Eduard Ayguadé, Jordi Garcia, and Jordi Torres. High Performance Fortran Implementations: A Survey. Scientific Programming, Vol. 6(3):243-248, 1997. Doi: 10.1155/1997/875952.
22. Eduard Ayguadé, Jordi Garcia, Mercé Gironès, M. Luz Grande, and Jesús Labarta. DDT: A Research Tool for Automatic Data Distribution in HPF. Scientific Programming – Special Issue on Implementations of HPF, Vol. 6(1):73-94, Spring 1997. Doi: 10.1155/1997/780152.
23. Jordi Garcia, Eduard Ayguadé, and Jesús Labarta. Using a 0-1 Integer Programming Model for Automatic Static Data Distribution. Parallel Processing Letters, Vol. 6(1):159-171, 1996. Doi: 10.1142/S0129626496000169.
24. Eduard Ayguadé, Jesús Labarta, Jordi Garcia, Mercé Gironès, and Mateo Valero. Analyzing Reference Patterns in Automatic Data Distribution Tools. International Journal of Parallel Programming, Vol. 23(6):515-535, 1995. Doi: 10.1007/BF02577865.

PUBLICATIONS: CONFERENCES

1. Rasool Seyghaly, Jordi Garcia, Xavi Masip-Bruin. Interference Recognition for Fog Enabled IoT Architecture using a Novel Tree-Based Method. IEEE International Conference on Omni-Layer Intelligent Systems (COINS), Barcelona, Spain, August 2022.
2. Rasool Seyghaly, Jordi Garcia, Xavi Masip-Bruin. An Edge-based Strategy for Smart Advertising. International Conference on Computer Communications and Networks (ICCCN), Athens, Greece, July 2021.
3. Souvik Sengupta, Jordi Garcia, Xavi Masip-Bruin. Collaborative learning-based Schema for Predicting Resource Usage and Performance in F2C Paradigm. IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS), Delhi, India, December 2020.
4. Martí Miquel-Martínez, Eva Marín-Tordera, Xavi Masip-Bruin, Sergio Sánchez-López, Jordi Garcia. Implementing a Blockchain-Based Security System Applied to IoT. EAI International Conference on Broadband Communications, Networks and Systems, Qingdao, China, December 2020.
5. Xavi Masip-Bruin, Vitor Barbosa Souza, Eva Marín-Tordera, Guang-Jia Ren, Admela Jukan, Jordi Garcia. A Multidimensional Control Architecture for Combined Fog-to-Cloud Systems. Future of Information and Communications Conference (FICC), San Francisco, CA, March 2020.
6. Azin Moradbeike, Kamal Jamshidi, Ali Bohlooli, Jordi Garcia, Xavi Masip-Bruin. A Fog Based Approach for Hazards Differentiation in an IIoT Scenario. IEEE International Conference on Computer and Communication Systems (ICCCS), Shanghai, China, February 2020.
7. Souvik Sengupta, Jordi Garcia, Xavi Masip-Bruin, Andrés Prieto. An Architectural Schema for Performance Prediction Using Machine Learning in the Fog-to-Cloud Paradigm. IEEE Annual Ubiquitous Computing Electronics & Mobile Communication Conference (UEMCON), New York, USA, October 2019.
8. Souvik Sengupta, Sarang Kahvazadeh, Xavi Masip-Bruin, Jordi Garcia. SFDDM: A Secure Distributed Database Management in Combined Fog-to-Cloud Systems. IEEE International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD), Limassol, Cyprus, September 2019.
9. Jordi Garcia, Xavi Masip-Bruin, Yunsong Lu. The Progressive Mapping System Architecture for Global Resources Management. International Conference on Computer Communications and Networks (ICCCN), Valencia, Spain, July 2019.
10. Sarang Kahvazadeh, Xavi Masip-Bruin, Rodrigo Diaz, Eva Marin-Tordera, Alejandro Jurnet, Jordi Garcia, Admela Juan, Ester Simó. Balancing Security Guarantees vs QoS Provisioning in Combined Fog-to-Cloud Systems. IFIP International Conference on New Technologies, Mobility and Security (NTMS 2019), Canary Islands, Spain, June 2019.
11. Jordi Garcia, Francesc Aguiló, Ester Simó, Marisa Zaragoza, X.Masip-Bruin, Yunsong Lu, Andrés Prieto, Joan Molina. A Preliminary Model for Optimal Load Distribution in Heterogeneous Smart Environments. IEEE International Conference on High Performance Switching and Routing (HPSR), Xi'an, China, May 2019.
12. Jordi Garcia, Ester Simó, Xavier Masip-Bruin, Eva Marín-Tordera, Sergi Sánchez-López. Do we really need cloud? Estimating the fog computing capacities in the city of Barcelona. Workshop on managed Fog-to-Cloud, as part of the 11th IEEE/ACM International Conference on Utility and Cloud Computing (UCC), Zurich, Switzerland, December 2018.

13. Souvik Sengupta, Jordi Garcia, Xavi Masip-Bruin. Taxonomy and Resource Modeling in Combined Fog-to-Cloud Systems. Future Technologies Conference (FTC2018), Vancouver, Canada, November 2018.
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ACADEMIC BOOK CHAPTERS

- Computer Fundamentals (Original title in Catalan: *Fonaments de Computadors*), 2001. ISBN: 84-8429-259-2 and 84-9707-057-7.

LIST OF SUBJECTS TAUGHT

In the Vilanova i la Geltrú School of Engineering, at the UPC BarcelonaTech:

- Data Driven Design, subject from the Barcelona Masters' Degree in Design, since 2017.
- Distributed Operating Systems, subject from the Informatics Engineering Degree, since 2015.
- Operating Systems, subject from the Informatics Engineering Degree, since 2015.

- Parallel Systems, subject from the Informatics Engineering Degree, since 2015.
- Computer Structure, subject from the Informatics Engineering Degree, since 2015.

In the Postgraduate UPC School, at the UPC BarcelonaTech:

- Computer Architecture and Operating Systems, Video Games Degree, since 2014.
- Mobile Devices Systems and Technology, postgraduate course, since 2012.

In the Barcelona School of Informatics, at the UPC BarcelonaTech:

- Parallel Systems, subject from the Informatics Engineering Degree, from 2013 to 2015.
- Operating Systems, subject from the Informatics Engineering Degree, from 2010 to 2015.
- Operating Systems Project, from 2004 to 2006, and 2011 to 2012 (subject from the MSc in Information Technologies, taught in English).
- Information Technology Projects in Developing Countries, from 2005 to 2010.
- Operating Systems Internal Structure and Design, from 2005 to 2008.
- Operating Systems Internal Structure, from 2001 to 2004.
- Operating Systems, from 1998 to 2002 and in 2010.

In the Institute of Sustainability, at the UPC BarcelonaTech:

- Information and Communication Technologies for Development, MSc course, 2011-2015.

In the Department of Computer Architecture, at the UPC BarcelonaTech:

- Parallel and Distributed Computing using Java, PhD course, in 2001 and 2002.

In the Barcelona School of Telecommunications Engineering, at the UPC BarcelonaTech:

- Computer Architecture and Operating Systems–II, in 1998 and 1999.
- Computer Architecture and Operating Systems–I, from 1992 to 1994 and from 1996 to 1999.
- Introduction to Computers, from 1994 to 1996.

In the *Universitat Oberta de Catalunya*, on-line consulting:

- Computer Fundamentals, since 2011.
- Computer Structure and Technology, from 2003 to 2010.
- Technology Fundamentals, in 2005 and 2008.
- Computer Fundamentals I, from 1997 to 2003.

In the University of Reading, UK, in the MSc in Network Centered Computing:

- Advanced Operating Systems and Network Programming in Unix, from 2003 to 2011.

SUPPORT IN THE ORGANIZATION OF EVENTS

CONFERENCE ORGANIZATION

- International Conference on the Design of Reliable Communication Networks, Vilanova i la Geltrú, Spain. March 2022. Publication Chair.

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- The 9th ACM International Conference on Supercomputing, Barcelona. July 1995.
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JOURNAL EDITOR

- Guest Editor, Electronics MDPI open access journal (ISSN 2079-9292), Special Issue "Resource Management in Cloud/Edge Computing", 2021.
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