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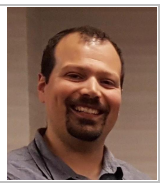

I. MAIN INFORMATION

I.1 Current Activity

Positions: Sr. Researcher, Computer Sciences, Barcelona Supercomputing Center (BSC), Spain (Sep. 2015).
Teaching and Research Staff, Universitat Politècnica de Catalunya (UPC), Spain (Jan. 2017).
Main responsibilities: Activity Lead "Accelerators and Communications for HPC", Programming Models Gr.
Manager of the BSC/UPC NVIDIA GPU Center of Excellence.
Member of the BSC Outreach Working Group.

I.2 Former Activity

Position: Postdoctoral Appointee.
Organization: Mathematics and Computer Science Division, Argonne National Laboratory (USA).
Main responsibilities: Integrated into the core **MPICH** R&D team – derivatives **default MPI in 9 out of the top 10 supercomputers in TOP500**. Technical lead of the accelerator virtualization project (VOCL). Driving research area in system software for heterogeneous memories.
Dates: From Feb. 2013 to July 2015.

Position: Research Fellow and Research Assistant.
Main responsibilities: Original Developer, Architect, and Development Supervisor of **rCUDA.**
Organizations: Department of Computer Science and Engineering, Universitat Jaume I (Spain).
Department of Computer Engineering, Universitat Politècnica de València (Spain).
Dates: Feb. 2009 – Feb. 2013.

I.3 Main Education

Title of Degree: PhD in Advanced Computer Systems.
PhD title: Virtualization of Accelerators in High Performance Clusters.
Advisors: Rafael Mayo, Universitat Jaume I – Federico Silla, Universitat Politècnica de València (Spain).
University: Universitat Jaume I (Spain).
Grade: *Cum Laude.*
PhD defense: Jan. 2013.
Impact: **Extraordinary Doctoral Award – Derived in a spin-off (Remote Libraries).**

Title of Degree: Advanced Studies Diploma (Post-graduate Diploma, MS equivalent).
Area: Advanced Computer Systems.
University: Universitat Jaume I (Spain).
Grade: A (9/10).
Date: Feb. 2010.

Title of Degree: Computer Engineering (5 years, BS + MS equivalent) – Specialization: Industrial Computers.
University: Universitat Jaume I (Spain).
Grade: A- (8.14/10 – 2.39/4).
Date: Jul. 2006.

I.4 Main Skills

Design and development of high-end runtime systems – High performance and cluster computing, accelerators
Programming model design and analysis – Low and high level programming (C, C++, Python, …)
Low-level HPC network programming and analysis – Team cooperation and coordination

I.5 Awards and Distinctions

1. 2017 IEEE TCHPC Award for Excellence for Early Career Researchers in High Performance Computing.
2. Marie Curie Fellow – Modality: Reintegration Panel (Acceptance Rate: 12%). European Commission. "Advanced Ecosystem for Broad Heterogeneous Memory Usage" (ECO-H-MEM). Mar. 2018 – Mar. 2020.
3. Juan de la Cierva Fellow – Modality: Incorporation. Spanish Ministry of Economy, Industry, and Competitiveness. Ranked 2nd in category (Score: 99/100). Jan. 2017 – Feb. 2018.
4. Extraordinary Doctoral Award. Universitat Jaume I (Spain). Sep. 2015.
5. Scale Challenge Finalist. *The 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Shenzhen, Guangdong, China, May 2015.
6. Best Paper. *The Fourth International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (ENERGY)*, Chamonix, France, Apr. 2014.
7. Best Technical Paper. *IEEE International Conference on Cluster Computing (Cluster)*, Indianapolis, IN, USA, Sep. 2013.

I.6 Technology Transfer

1. The BSC/UPC NVIDIA GPU Center of Excellence to incorporate in brief a cuThomasBatch solver into the cuSPARSE library of the NVIDIA Toolkit. Already approved by both parties.
2. Contributions in MPICH grabbed by its multiple derivatives (such as Intel MPI, Cray MPI, IBM MPI, or ParaStation MPI), which are default in 9 out of the top 10 supercomputers in the TOP500 list.
3. Predoctoral research derived in a free binary package distributed by the Universitat Politècnica de València (Spain) and supported by a spin-off company.

I.7 Licensed/Registered Software

1. **Title:** Process-based Asynchronous Progress Model for MPI RMA (Casper).
   Description: Portable and flexible process-based asynchronous progress model for MPI remote memory access (RMA) communication.
   License: Open Source (BSD).
   Authors: M. Si, A. J. Peña, and P. Balaji, Argonne National Laboratory.
   IP Registry Code: OSS-15-1059 (registered May 2015).
   Known Users: Intel Corporation.
2. **Title:** Extended Valgrind for Object-Differentiated Profiling (EVOP).
   Description: Extensions to the Valgrind generic instrumentation framework and two of its tools to enable object-differentiated data-oriented profiling.
   License: Open Source (GNU GPL).
   Authors: A. J. Peña and P. Balaji, Argonne National Laboratory.
   IP Registry Code: OSS-16-1096 (registered Mar. 2015; conferred Dec. 2015).
   Known users: Barcelona Supercomputing Center, Intel.
3. **Title:** New implementation of a GPU virtualization architecture – rCUDA.
   Description: Enables the transparent use of GPUs placed in remote nodes through the CUDA API.
   License: Free Sofware (binary).
   Authors: J. Duato, R. Mayo, A. J. Peña, E. S. Quintana-Orti, and F. Silla.
   Registered: Universitat Jaume I and Universitat Politècnica de València (Spain). May 2012.
   Known Users: 500+. Exploited by a spin-off company.
4. **Title:** AstroAdapt
   Description: Software tool to assist mobility-disabled people.
   License: Open Source (GNU GPL), Jan. 2009.
   Authors: A. Ortiz, T. Gallego, A. J. Peña, and L. Algarra, Universitat de València.
   Known Users: Observatori Astronòmic, Universitat de València.

I.8 Citation Indices (Google Scholar)

Citations	h-index	i10-index	i100-index
675	13	15	1

I.9 Professional Activity

Jan. 2017 – Current. Teaching and Research Staff, Universitat Politècnica de Catalunya, Spain.

Sep. 2015 – Current. Senior Researcher. Computer Sciences Department, Barcelona Supercomputing Center.

Feb. 2013 – July 2015. Postdoctoral Appointee. Mathematics and Computer Science Division, Argonne National Laboratory, USA.

Oct. 2012 – Feb. 2013. Research Fellow and Researcher. Department of Computer Science and Engineering, Universitat Jaume I, Spain.

Sep. 2011 – Dec. 2011. Graduate Intern. Swiss National Supercomputing Center, ETH Zürich, Switzerland.

Feb. 2009 – Sep. 2011 and Mar. 2012 – July 2012. Research Assistant. Department of Computer Engineering, Universitat Politècnica de València, Spain.

July 2007 – Oct. 2007. Research Fellow. Dept. of Computer Science and Engineering, Universitat Jaume I.

Nov. 2006 – July 2007, Feb. 2008 – July 2008, and Nov. 2008 – Dec. 2008. Collaborator, Collaboration Fellow, and Junior Research Assistant. Astronomical Observatory, Universitat de València, Spain.

July 2006 – Nov. 2006. Research Fellow. Department of Industrial Systems Engineering, Universitat Jaume I.

July 2005 – May 2006. Undergraduate Intern. Innova Advanced Consulting, Spain.

Feb. 2004 – July 2004. Collaboration Fellow. Department of Basic and Clinic Psychology and Psychobiology, Universitat Jaume I, Spain.

II. ACADEMIC ACTIVITY

II.1 Given Courses / Seminars / Tutorials

1. Computer Structure (Labs). B.S. Computer Science. Universitat Politècnica de Catalunya, Spain. Spring 2017 and spring 2018.
2. X. Martorell, X. Teruel, and A. J. Peña, "Parallel programming with MPI and OpenMP". Universidad Autónoma de Madrid. Nov. 2016 and Nov. 2017.
3. P. Farre and A. J. Peña. "Best GPU code practices combining OpenACC, CUDA, and OmpSs". GPU Technology Conference Europe (GTC Europe), Munich, Germany, Oct. 2017.
4. A. J. Peña and M. Hidayetoglu. "Multi-GPU Programming and CUDA Interoperability (MPI, OpenACC)". PUMPS Summer School, Barcelona, Spain, June 2017.
5. P. Farre, G. Ozen, and A. J. Peña. "Best GPU code practices combining OpenACC, CUDA, and OmpSs". GPU Technology Conference (GTC), Silicon Valley, USA. May 2017.
6. A. J. Peña and P. Valero. "Introduction to OpenACC". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, Apr. 2017.
7. A. J. Peña. "GPU programming models and their combinations". Universidad de Córdoba, Spain. Apr. 2017.
8. X. Martorell, X. Teruel, and A. J. Peña. "Parallel Programming Workshop". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, Oct. 2016.
9. A. J. Peña. "Introduction to CUDA programming". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, July 2016.
10. P. Balaji, R. Thakur, K. Raffenetti, A. J. Peña, and M. Si. "Advanced parallel programming with MPI-3". Argonne National Laboratory, Argonne, IL, USA, June 2015.

11. P. Balaji, R. Thakur, K. Raffenetti, A. J. Peña, and M. Si. "Introduction to MPI". Argonne National Laboratory, Argonne, IL, USA, June 2015.
12. A. J. Peña. "Web-based remote telescope control". Astronomical Observatory, Universitat de València, Valencia, Spain, Mar. 2009.
13. A. J. Peña. "Astroadapt: Free software for persons suffering mobile disability". Astronomical Observatory, Universitat de València, Valencia, Spain, Feb. 2009.

II.2 Advised PhD Theses

1. Vishal Mehta. "A comprehensive enhancement of the computational multiphysics experience". Universitat Politècnica de Catalunya (Spain). Sep. 2019 (estimated).
2. Sergio Iserte. "Dynamic management of resource allocation for OmpSs jobs". Universitat Jaume I (Spain). Sep. 2018 (estimated).
3. Adrián Castelló. "Programming models for the lightweight threads era". Universitat Jaume I (Spain). Sep. 2018 (estimated).
4. Víctor García. "Memory hierarchies for future HPC architectures". Universitat Politècnica de Catalunya (Spain). Oct. 2017.

II.3 Advised Master Theses

1. Aimar Rodríguez. "GPU support for the Nanos6 task parallel runtime". Universitat Politècnica de Catalunya (Spain). Sep. 2017 (estimated).
2. Ivan Martínez. "Prefetching strategies for fine-grained automatic CPU-GPU migrations". Universitat Politècnica de Catalunya (Spain). Sep. 2017 (estimated).

II.4 Supervised Final Year Projects

1. Luis Toledo. "Design of a website for a cultural association". Universitat Politècnica de València (Spain). Sep. 2012.
2. Tomás Navarro. "Implementation of rCUDA over VELO". Universitat Politècnica de València (Spain). Sep. 2012.

II.5 Mentorships / Supervision

1. Kyunghun Kim. Software Engineer. Barcelona Supercomputing Center (Spain). May 2017 – Current.
2. Pedro Valero. Researcher. Barcelona Supercomputing Center (Spain). Nov. 2016 – Current.
3. Ivan Martínez. Research Student. Barcelona Supercomputing Center (Spain). Sep. 2016 – Current.
4. Aimar Rodríguez. Research Student. Barcelona Supercomputing Center (Spain). Apr. 2016 – Current.
5. Pau Farre. Jr. Engineer. Barcelona Supercomputing Center (Spain). Mar. 2016 – Current.
6. Marc Jordà. Jr. Engineer. Barcelona Supercomputing Center (Spain). Mar. 2016 – Current.
7. Víctor García. Resident Student. Barcelona Supercomputing Center (Spain). Mar. 2016 – July 2017.
8. Min Si. Graduate Intern from The University of Tokyo (Japan). Argonne National Laboratory (USA). Apr. 2013 – Sep. 2013 and May 2014 – Apr. 2016.
9. Ashwin Aji. Graduate Student from Virginia Tech University (USA). Mar. 2014 – Nov. 2015.
10. Sayan Ghosh. Graduate Intern from The University of Houston (USA). Argonne National Laboratory (USA). May 2014 – June 2014.
11. Adrián Castelló. Graduate Student from Universitat Jaume I (Spain). Oct. 2014 – June 2015.
12. Xiuxia Zhang. Graduate Intern from Institute of Computing Technology, Chinese Academy of Sciences (China). Argonne National Laboratory (USA). June 2013 – May 2014.

13. Adrián Castelló. Research Scholar. Universitat Jaume I (Spain). May. 2011 – Feb. 2013.
14. Carlos Reaño. Research Assistant. Universitat Politècnica de València (Spain). Feb. 2011 – Feb. 2013.

II.6 Academic Committees

1. Predefense Committee Member. Ugljesa Milic. "Multicore architecture optimizations for HPC applications". Universitat Politècnica de Catalunya (Spain). July 2017.
2. Predefense Committee Member. Jan Ciesko. "On algorithmic reductions in task-parallel programming models". Universitat Politècnica de Catalunya (Spain). May 2017.
3. Defense Committee Member. Ivan Tanasic. "Towards multiprogrammed GPUs". Universitat Politècnica de Catalunya (Spain). Feb. 2017.
4. Predefense Committee Member. Ivan Tanasic. "Towards multiprogrammed GPUs". Universitat Politècnica de Catalunya (Spain). Nov. 2016.

II.7 Training

1. Teacher Training Course (CAP). Statistics and Computer Science. Universitat Jaume I. Mar. 2008.

III. RESEARCH ACTIVITY

III.1 Publications

* Main author **highlighted**; in papers as PhD student authors are ordered alphabetically and optionally by institution.

III.1.1 International Journals

1. S. Chandrasekaran and A. J. Peña. "Special issue on topics on heterogeneous computing", Parallel Computing, Elsevier, vol. 68, pp. 1-2, Oct. 2017. **Editorial.**
2. **A. Castelló**, A. J. Peña, R. Mayo, J. Planas, E. S. Quintana-Ortí, and P. Balaji, "Exploring the interoperability of remote GPGPU virtualization using rCUDA and directive-based programming models", Journal of Supercomputing, Springer, June 2016. DOI: 10.1007/s11227-016-1791-y.
3. **A. M. Aji**, A. J. Peña, P. Balaji, and W. Feng, "MultiCL: Enabling automatic scheduling for task-parallel workloads in OpenCL", Parallel Computing, Elsevier, vol. 58, pp. 37-55, Oct. 2016.
4. **A. J. Peña** and P. Balaji, "A data-oriented profiler to assist in data partitioning and distribution for heterogeneous memory in HPC", Parallel Computing, Elsevier, vol. 51, pp. 46-55, Jan. 2016.
5. **C. Reaño**, F. Silla, A. Castelló, A. J. Peña, R. Mayo, E. S. Quintana-Ortí, and J. Duato, "Improving the user experience of the rCUDA remote GPU virtualization framework", Concurrency and Computation: Practice and Experience, Wiley, vol. 27, no. 14, pp. 3746-3770, Sep. 2015.
6. **A. J. Peña**, C. Reaño, F. Silla, R. Mayo, E. S. Quintana-Ortí, and J. Duato, "A complete and efficient CUDA-sharing solution for HPC clusters", Parallel Computing, Elsevier, vol. 40, no. 10, pp. 574-588, Dec. 2014.

III.1.2 International Conferences

1. **P. Valero-Lara**, I. Martinez-Perez, R. Sirvent, X. Martorell, and A. J. Peña. "NVIDIA GPUs scalability to solve multiple (batch) tridiagonal systems. Implementation of cuThomasBatch", in *12th International Conference on Parallel Processing and Applied Mathematics (PPAM)*, Lublin, Poland, Sep. 2017.
2. **H. Servat**, A. J. Peña, G. Llort, E. Mercadal, H. C. Hoppe, and J. Labarta. "Automating the application data placement in hybrid memory systems", in *IEEE Cluster*, Hawaii, USA, Sep. 2017.

3. **A. Castelló**, S. Seo, R. Mayo, P. Balaji, E. S. Quintana-Orti, and A. J. Peña. "GLT: A unified API for lightweight thread libraries", in *23rd International European Conference on Parallel and Distributed Computing (Euro-Par)*, Santiago de Compostela, Spain, Aug. 2017.
4. **V. Garcia-Flores**, E. Ayguade, and A. J. Peña. "Efficient data sharing on heterogeneous systems", in *The 46th International Conference on Parallel Processing (ICPP)*, Bristol, UK, Aug. 2017.
5. **A. Castelló**, S. Seo, R. Mayo, P. Balaji, E. S. Quintana-Orti, and A. J. Peña. "GLTO: On the adequacy of lightweight thread approaches for OpenMP implementations", *in The 46th International Conference on Parallel Processing (ICPP)*, Bristol, UK, Aug. 2017.
6. **A. J. Peña**, V. Beltran, C. Clauss, and T. Moschny. "Supporting automatic recovery in offloaded distributed programming models through MPI-3 techniques", in *International Conference on Supercomputing (ICS)*, Chicago, USA, June 2017.
7. **P. Valero-Lara**, I. Martínez-Pérez, A. J. Peña, X. Martorell, R. Sirvent, and J. Labarta. "cuHinesBatch: Solving multiple Hines systems on GPUs. Human Brain Project", in *International Conference on Computational Science (ICCS)*, Zurich, Switzerland, June 2017.
8. **J. Gómez-Luna**, I. El Hajj, L. Chang, V. Garcia-Flores, S. Garcia de Gonzalo, T. B. Jablin, A. J. Peña, and W. Hwu. "Chai: Collaborative heterogeneous applications for integrated-architectures", in *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*, San Francisco, USA, Apr. 2017.
9. **V. Garcia**, J. Gomez-Luna, T. Grass, A. Rico, E. Ayguade, and A. J. Peña. "Evaluating the effect of last-level cache sharing on integrated GPU-CPU systems with heterogeneous applications", in *IEEE International Symposium on Workload Characterization (IISWC)*, Rhode Island, USA, Sep. 2016.
10. **A. Castelló**, A. J. Peña, S. Seo, R. Mayo, P. Balaji, and E. S. Quintana-Orti. "A review of lightweight thread approaches for high performance computing", in *IEEE International Conference on Cluster Computing (Cluster)*, Taipei, Taiwan, Sep. 2016.
11. **S. Ghosh**, J. Hammond, A. J. Peña, P. Balaji, A. Gebremedhin, and B. Chapman. "One-sided interface for matrix operations using MPI-3 RMA: A case study with Elemental", in *International Conference on Parallel Processing (ICPP)*, Philadelphia, PA, USA, Aug. 2016.
12. **A. J. Peña**, W. Bland, and P. Balaji. "VOCL-FT: Introducing techniques for efficient soft error coprocessor recovery", in *The International Conference for High Performance Computing, Networking, Storage and Analysis (SC15)*, Austin, TX, USA, Nov. 2015.
13. **A. Aji**, A. J. Peña, P. Balaji, and W. Feng. "Automatic command queue scheduling for task-parallel workloads in OpenCL", in *IEEE International Conference on Cluster Computing (Cluster)*, Chicago, IL, USA, Sep. 2015.
14. **A. Castelló**, A. J. Peña, R. Mayo, P. Balaji, and E. S. Quintana-Ortí. "Exploring the suitability of remote GPGPU virtualization for the OpenACC programming model using rCUDA", in *IEEE International Conference on Cluster Computing (Cluster)*, Chicago, IL, USA, Sep. 2015.
15. **M. Si**, A. J. Peña, J. Hammond, P. Balaji, M. Takagi, and Y. Ishikawa. "Casper: An asynchronous progress model for MPI RMA on many-core architectures", in *29th IEEE International Parallel & Distributed Processing Symposium (IPDPS)*, Hyderabad, India, May 2015.
16. **M. Si**, A. J. Peña, J. Hammond, P. Balaji, and Y. Ishikawa. "Scaling NWChem with efficient and portable asynchronous communication in MPI RMA", in *The 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Shenzhen, China, May 2015. **Scale Challenge Finalist**.
17. **A. J. Peña** and P. Balaji. "Toward the efficient use of multiple explicitly managed memory subsystems", in *IEEE International Conference on Cluster Computing (Cluster)*, Madrid, Spain, Sep. 2014.
18. **M. Si**, A. J. Peña, P. Balaji, M. Takagi, and Y. Ishikawa. "MT-MPI: Multithreaded MPI for many-core environments", in *ACM International Conference on Supercomputing (ICS)*, Munich, Germany, June 2014.
19. **A. Castelló**, J. Duato, R. Mayo, A. J. Peña, E. S. Quintana-Ortí, V. Roca, and F. Silla. "On the use of remote GPUs and low-power processors for the acceleration of scientific applications", in *The Fourth International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies (ENERGY)*, Chamonix, France, Apr. 2014. **Best Paper**.

20. **A. J. Peña**, R. G. Correa Carvalho, J. S. Dinan, P. Balaji, R. Thakur, and W. D. Gropp. "Analysis of topology-dependent MPI performance on Gemini networks", in *The Euro MPI Users' Group Conference (EuroMPI)*. Madrid, Spain, Sep. 2013.
21. **C. Reaño**, F. Silla, R. Mayo, E. S. Quintana-Ortí, J. Duato, and A. J. Peña. "Influence of InfiniBand FDR on the performance of remote GPU virtualization", in *IEEE International Conference on Cluster Computing (Cluster)*, Indianapolis, IN, USA, Sep. 2013. **Best Technical Paper**.
22. **A. J. Peña** and S. Alam. "Evaluation of inter- and intra-node data transfer efficiencies between GPU devices and their impact on scalable applications", in *The 13th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Delft, The Netherlands, May 2013.
23. **C. Reaño**, A. J. Peña, F. Silla, J. Duato, R. Mayo, and E. S. Quintana-Ortí. "CU2rCU: Towards the complete rCUDA remote GPU virtualization and sharing solution", in *Proceedings of the International Conference on High Performance Computing (HiPC)*, Pune, India, Dec. 2012.
24. **S. Alam**, J. Poznanovic, U. Varetto, N. Bianchi, A. J. Peña, and N. Suvanphim. "Early experiences with the Cray XK6 hybrid CPU and GPU MPP platform", in *Cray User Group Conference (CUG)*, Stuttgart, Germany, Apr. 2012.
25. J. Duato, J. C. Fernández, R. Mayo, **A. J. Peña**, E. S. Quintana-Orti, and F. Silla. "Enabling CUDA acceleration within virtual machines using rCUDA", in *High Performance Computing Conference (HiPC)*, Bangalore, India, Dec. 2011.
26. J. Duato, R. Mayo, **A. J. Peña**, E. S. Quintana-Ortí, and F. Silla. "Performance of CUDA virtualized remote GPUs in high performance clusters", in *International Conference on Parallel Processing (ICPP)*, pp. 365-374, Taipei, Taiwan, Sep. 2011.

III.1.3 International Workshops

1. **S. Iserte**, R. Mayo, E. S. Quintana-Orti, V. Beltran, and A. J. Peña, "Efficient scalable computing through flexible applications and adaptive workloads", in *Tenth International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, Bristol, UK, Aug. 2017.
2. **H. Servat**, J. Labarta, H. C. Hoppe, J. Gimenez, and A. J. Peña, "Integrating memory perspective into the BSC performance tools", in *Tenth International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, Bristol, UK, Aug. 2017.
3. **S. Iserte**, A. J. Peña, R. Mayo, E. S. Quintana-Ortí, and V. Beltrán, "Dynamic management of resource allocation for OmpSs jobs", in *PhD Symposium on Sustainable Ultrascale Computing Systems (NESUS PhD)*, Timisoara, Romania, Feb. 2016.
4. **A. J. Peña** and P. Balaji. "A framework for tracking memory accesses in scientific applications", in *43nd International Conference on Parallel Processing Workshops (ICPP-W)*, Minneapolis, MN, USA, Sep. 2014.
5. J. Duato, **A. J. Peña**, F. Silla, R. Mayo, and E. S. Quintana-Ortí, "rCUDA: reducing the number of GPU-based accelerators in high performance clusters", in *Proceedings of the International Conference on High Performance Computing and Simulation (HPCS)*, Caen, France, June 2010.
6. J. Duato, F. D. Igual, R. Mayo, **A. J. Peña**, E. S. Quintana-Ortí, and F. Silla, "An efficient implementation of GPU virtualization in high performance clusters", in *Euro-Par 2009, Parallel Processing – Workshops***,** 6043, pp. 385-394, Lecture Notes in Computer Science, Springer, 2010.
7. M. F. Dolz, J. C. Fernández, E. S. Quintana-Ortí, R. Mayo, and A. J. Peña. "Research line on power-aware computing by the High Performance and Architectures Group", in *COST Action IC0804 on Energy Efficiency in Large Scale Distributed Systems*, pp. 32-36, Toulouse, France, Nov. 2009.

III.1.4 International Posters

1. **P. Valero-Lara**, I. Martinez-Perez, Antonio J. Peña, X. Martorell, R. Sirvent, and J. Labarta, "Simulating the behavior of the human brain on NVIDIA GPUs (Human Brain Project)", in *GPU Technology Conference (GTC)*, Silicon Valley, USA, May 2017.

2. **V. García**, J. Gómez-Luna, T. Grass, A. Rico, A. J. Peña, and E. Ayguadé, "Analyzing the effect of last level cache sharing on integrated platforms with fine-grain CPU-GPU collaboration", in *GPU Technology Conference Europe (GTC Europe)*, Amsterdam, The Netherlands, Sep. 2016.
3. **A. Castelló**, A. J. Peña, S. Seo, R. Mayo, P. Balaji, and E. S. Quintana-Ortí, "On the use of lightweight threads", in *Advanced Computer Architectures and Compilation for Embedded Systems (ACACES),* pp. 83-86, HiPEAC Network of Excellence, Fuggi, Italy, July 2016.
4. **A. J. Peña** and P. Balaji, "Understanding data access patterns using object-differentiated memory profiling", in *The 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Shenzhen, China, May 2015.
5. **K. Raffenetti**, A. J. Peña, and P. Balaji, "Toward implementing robust support for Portals 4 networks in MPICH", in *The 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Shenzhen, Guangdong, China, May 2015.
6. **C. Reaño**, F. Silla, A. J. Peña, G. Shainer, S. Schultz, A. Castelló, E. S. Quintana-Ortí, and J. Duato, "Boosting the performance of remote GPU virtualization using InfiniBand Connect-IB and PCIe 3.0", in *IEEE International Conference on Cluster Computing* (*Cluster)*, Madrid, Spain, Sep. 2014.
7. J. Duato, **A. J. Peña**, F. Silla, R. Mayo, and E. S. Quintana-Ortí, "rCUDA InfiniBand performance", in *International Supercomputing Conference (ISC)*, Hamburg, Germany, June 2011.
8. J. Duato, R. Mayo, **A. J. Peña**, E. S. Quintana-Ortí, and F. Silla. "Network influence on rCUDA", in *Advanced Computer Architectures and Compilation for Embedded Systems (ACACES),* pp. 9-12, HiPEAC Network of Excellence, Terrassa (Barcelona), Spain, July 2010.
9. J. Duato, F. D. Igual, R. Mayo, **A. J. Peña**, E. S. Quintana-Ortí, and F. Silla, "Virtualized remote GPUs", in *Advanced Computer Architectures and Compilation for Embedded Systems (ACACES),* pp. 221-224, HiPEAC Network of Excellence, Terrassa (Barcelona), Spain, July 2009.
10. **A. J. Peña** and J. Fabregat, "A robust bolid and fireball detection algorithm for all-sky sequential images", in *Meteoroids*, Barcelona, Spain, June 2007.

III.1.5 International Oral Communications

1. A. J. Peña, H. Servat, *et. al.*, "Use of the Folding profiler to assist on data distribution for heterogeneous memory systems", in *7th Joint Laboratory for Extreme-Scale Computing Workshop (JLESC)*, Urbana, USA, June 2017.
2. A. J. Peña, H. Servat, G. Llort, J. Jiménez, J. Labarta, "Use of the Folding profiler to assist on data distribution for heterogeneous memory systems", in *6th Joint Laboratory for Extreme-Scale Computing Workshop (JLESC),* Kobe, Japan, Dec. 2016.
3. A. J. Peña and L. Oden, "Data distribution approaches for heterogeneous memory systems", in *5th Joint Laboratory for Extreme-Scale Computing Workshop (JLESC)*, Lyon, France, June 2016.
4. A. J. Peña and H. Servat, "Data placement on heterogeneous memory systems in HPC", in *4th Joint Laboratory for Extreme-Scale Computing Workshop (JLESC),* Bonn, Germany, Nov. 2015.
5. H. Servat and A. J. Peña, "Study the use of the Folding hardware-based profiler to assist on data distribution for heterogeneous memory systems in HPC", in *3rd Joint Laboratory for Extreme-Scale Computing Workshop (JLESC),* Barcelona, Spain, June 2015.
6. **A. J. Peña** and P. Balaji. "The upcoming era of memory heterogeneity in compute nodes", in *2nd Joint Laboratory for Extreme-Scale Computing Workshop (JLESC)*, Chicago, IL, USA, Nov. 2014.
7. A. J. Peña, "Virtualization of accelerators in high performance clusters", in *The International Conference for High Performance Computing, Networking, Storage and Analysis (SC)*, Dissertation Research Showcase, Salt Lake City, UT, USA, Nov. 2012.
8. J. Duato, **A. J. Peña**, F. Silla, R. Mayo, and E. S. Quintana-Ortí, "Modeling the CUDA remoting virtualization behaviour in high performance networks", in Workshop on Language, Compiler, and Architecture Support for GPGPU (LCA-GPGPU-I), Bangalore, India, Jan. 2010.

III.1.6 Spanish Conferences

1. **S. Iserte**, R. Mayo, E. S. Quintana-Orti, V. Beltran, and A. J. Peña. "El camino desde la maleabilidad MPI hasta las cargas de trabajos adaptativas", in *XXVIII Jornadas de Paralelismo*. Malaga, Spain, Sep. 2017.
2. **A. Castelló**, J. Duato, R. Mayo, A. J. Peña, and E. S. Quintana-Ortí. "Acelerando aplicaciones científicas con GPUs remotas y procesadores de bajo consumo", in *XXV Jornadas de Paralelismo*. Valladolid, Spain, Sep. 2014.
3. **S. Iserte**, A. Castelló, A. J. Peña, C. Reaño, J. Prades, F. Silla, R. Mayo, E. S. Quintana-Ortí, and J. Duato. "Extendiendo SLURM con soporte para el uso de GPUs remotas", in *XXV Jornadas de Paralelismo*. Valladolid, Spain, Sep. 2014.
4. **C. Reaño**, A. Castelló, S. Iserte, A. J. Peña, F. Silla, R. Mayo, E. S. Quintana-Ortí, and J. Duato. "Virtualización remota de GPUs: Evaluación de soluciones disponibles para CUDA", in *XXIV Jornadas de Paralelismo.* Madrid, Spain, Sep. 2013.
5. **S. Iserte**, A. Castelló, C. Reaño, A. J. Peña, F. Silla, R. Mayo, E. S. Quintana-Ortí, and J. Duato. "Un planificador de GPUs remotas en clusters HPC", in *XXIV Jornadas de Paralelismo*. Madrid, Spain, Sep. 2013.
6. **C. Reaño**, A. J. Peña, F. Silla, J. Duato, R. Mayo, and E. S. Quintana-Ortí. "CU2rCU: A CUDA-to-rCUDA converter", in *XXIII Jornadas de Paralelismo*, pp. 44-49. Elche, Spain, Sep. 2012.
7. J. Duato, **A. J. Peña**, F. Silla, J. C. Fernández, R. Mayo, and E. S. Quintana-Ortí. "A new approach to rCUDA", in *XXII Jornadas de Paralelismo*, pp. 305-310, La Laguna, Spain, Sep. 2011.
8. **C. Reaño**, A. J. Peña, F. Silla, R. Mayo, E. S. Quintana-Orti, and J. Duato. "rCUDA: Uso concurrente de dispositivos compatibles con CUDA de forma remota. Adaptación a CUDA 4", in *XXII Jornadas de Paralelismo*, pp. 311-316, La Laguna, Spain, Sep. 2011.
9. J. Duato, **A. J. Peña**, F. Silla, R. Mayo, and E. S. Quintana-Ortí. "rCUDA: A framework to perform remote CUDA calls", in *XXI Jornadas de Paralelismo*, pp. 519-526, Valencia, Spain, Sep. 2010.
10. J. Duato, F. D. Igual, R. Mayo, **A. J. Peña**, E. S. Quintana-Ortí, and F. Silla, "CUDA remoto para clusters de altas prestaciones", in *II Workshop en Aplicaciones de Nuevas Arquitecturas de Consumo y Altas Prestaciones (ANACAP)***,** Móstoles (Madrid), Spain, Nov. 2009.
11. J. Duato, **A. J. Peña**, F. Silla, F. D. Igual, R. Mayo, and E. S. Quintana-Ortí, "Accelerating computing through virtualized remote GPUs", in *XX Jornadas de Paralelismo*, pp. 635-639, A Coruña, Spain, Sep. 2009.
12. **A. J. Peña**, J. M. Claver, A. Sanjuan, and V. Arnau, "Análisis paralelo de secuencias de ADN mediante el uso de GPU y CUDA", in *Workshop de Aplicaciones de Nuevas Arquitecturas de Consumo y Altas Prestaciones (ANACAP),* Móstoles (Madrid), Spain, Nov. 2008.
13. **R. Rodríguez**, J. M. Claver, G. Fernández, A. J. Peña, and J. L. Sánchez, "Aceleración de la estimación de movimiento en la codificación H.264/AVC mediante GPUs", in *Workshop de Aplicaciones de Nuevas Arquitecturas de Consumo y Altas Prestaciones (ANACAP),* Móstoles (Madrid), Spain, Nov. 2008.

III.2 Invited Talks and Keynotes

1. A. J. Peña, "The Nightmare and Power of Heterogeneity in HPC", in *Tenth International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, Bristol, UK, Aug. 2017. **Keynote**.
2. A. J. Peña. "Best GPU code practices combining OpenACC, CUDA, and OmpSs", in *Workshop on Open Source Supercomputing (OpenSuCo)*, Frankfurt, Germany, June 2017.
3. A. J. Peña. "Toward heterogeneous memory systems for HPC", in *Enhancing Software Development for Emerging Platforms Using Algorithms and Performance Tools Minisymposium, SIAM CSE*, Salt Lake City, UT, USA, Mar. 2015.
4. A. J. Peña. "Virtualization of accelerators in high performance clusters". Argonne National Laboratory, Argonne, IL, USA, Oct. 2012.

5. **A. J. Peña** and R. Mayo, "rCUDA 4: GPGPU as a service in HPC clusters", in *HPC Advisory Council Spain Conference*, Málaga, Spain, Sep. 2012.
6. F. Silla and **A. J. Peña**. "rCUDA, an approach to provide remote access to GPU computational power", in *HPC Advisory Council Switzerland Conference*, Lugano, Switzerland, Mar. 2012.

III.3 Organization of Research and Dissemination Activities

1. General Chair. EuroMPI. Barcelona, Spain, Sep. 2018.
2. Program Co-chair. The Eight International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Vancouver, Canada, May 2018.
3. Co-organizer. 2nd Annual BSC/UPC HPC Hackathon. Barcelona, Spain, Nov. 2017.
4. Managing Guest Editor. International Journal on Parallel Computing (PARCO), Special Issue on Topics on Heterogeneous Computing, Elsevier. Vol. 68, Oct. 2017.
5. Proceedings Chair. EuroMPI/USA. Chicago, IL, USA, Sep. 2017.
6. Session Chair (GPU Applications). 46th International Conference on Parallel Processing (ICPP). Bristol, UK, Aug. 2017.
7. Local Organizer. Programming and tUning Massively Parallel Systems (PUMPS) Summer School. Barcelona (Spain), June 2017.
8. Organizer. Basic Programming of Multicore and Many-Core Processors for Image and Video Processing. Barcelona Supercomputing Center, Barcelona, Spain, June 2017.
9. Program Co-chair. The Seventh International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Orlando, FL, USA, May 2017.
10. Co-chair. IEEE International Scalable Computing Challenge (SCALE). Madrid, Spain, May 2017.
11. Organizer. "Introduction to OpenACC". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, Apr. 2017.
12. Organizer. "Introduction to CUDA Programming". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, Apr. 2017.
13. Co-organizer. 1st Annual BSC/UPC HPC Hackathon. Barcelona, Spain, Oct. 2016.
14. Local Organizer. Programming and tUning Massively Parallel Systems (PUMPS) Summer School. Barcelona (Spain), July 2016.
15. Organizer. "Introduction to OpenACC". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, July 2016.
16. Organizer. "Introduction to CUDA Programming". PRACE Advanced Training Centre, Barcelona Supercomputing Center, Barcelona, Spain, July 2016.
17. Program Co-chair. The Sixth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Chicago, IL, USA, May 2016.
18. Program Chair. Heterogeneous and Unconventional Cluster Architectures and Applications (HUCAA). Chicago, IL, USA, Sep. 2015.
19. Web Co-chair. IEEE International Conference on Cluster Computing (Cluster). Chicago, IL, USA, Sep. 2015.
20. Co-organizer. Enhancing Software Development for Emerging Platforms Using Algorithms and Performance Tools. SIAM CSE Minisymposium. Salt Lake City, UT, USA, Mar. 2015.
21. Session Chair (Data Movement and I/O). The Seventh International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2). Minneapolis, MN, USA, Sep. 2014.
22. Publicity Co-chair. The Fourth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Phoenix, AZ, USA, May 2014.
23. Volunteer Student at the Local Organization Committee. III Computer Science Spanish Conference (CEDI). Valencia, Spain, Sep. 2010.

III.4 Technical Committees

III.4.1 Program Committee for International Conferences and Workshops

1. SupercomputingAsia (SCA18). Singapore, Mar. 2018.
2. IEEE International Conference on High Performance Computing and Communications (HPCC). Bangkok, Thailand. Dec. 2017.
3. The International Conference for High Performance Computing, Networking, Storage and Analysis (SC17). Denver, CO, USA. Nov. 2017.
4. Fourth International Workshop on Accelerator Programming Using Directives (WACCPD). Denver, CO, USA. Nov. 2017.
5. The International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD). Campinas, Brazil. Oct. 2017.
6. EuroMPI/US 2017. Chicago, IL, USA. Sep. 2017.
7. IEEE International Conference on Cluster Computing (Cluster). Honolulu, Hawaii, USA. Sep. 2017.
8. 5th Workshop on Runtime and Operating Systems for the Many-core Era (ROME). Santiago de Compostela, Spain. Aug. 2017.
9. The International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar). Santiago de Compostela, Spain. Aug. 2017.
10. Third International Workshop on Communication Architectures for HPC, Big Data, Deep Learning and Clouds at Extreme Scale (ExaComm). June 2017.
11. 31st IEEE International Parallel & Distributed Processing Symposium (IPDPS). May 2017.
12. International Conference on High Performance Computing (HiPC). Hyderabad, India. Dec. 2016.
13. The International Conference for High Performance Computing, Networking, Storage and Analysis (SC16). BoF Programming Systems. Salt Lake City, UT, USA. Nov. 2016.
14. Third International Workshop on Accelerator Programming Using Directives (WACCPD). Salt Lake City, UT, USA. Nov. 2016.
15. 4th Workshop on Runtime and Operating Systems for the Many-core Era (ROME). Grenoble, France. Aug. 2016.
16. 16th IEEE International Conference on Scalable Computing and Communications (ScalCom). Tolouse, France. July 2016.
17. The Seventh International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING). Rome, Italy. Mar. 2016.
18. The 24rd International Conference on Computer Communications and Networks (ICCCN). Las Vegas, NV, USA. Aug. 2015.
19. The Fifth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Hyderabad, India. May 2015.
20. The Sixth International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING). Nice, France. Mar. 2015.
21. International Workshop on Enhancing Parallel Scientific Applications with Accelerated HPC (ESAA). Kyoto, Japan, Sep. 2014.
22. IEEE International Conference on Cluster Computing (Cluster). Madrid, Spain. Sep. 2014.
23. Heterogeneous and Unconventional Cluster Architectures and Applications (HUCAA). Minneapolis, MN, USA. Sep. 2014.
24. The 23rd International Conference on Computer Communications and Networks (ICCCN). Shanghai, China. Aug. 2014.
25. The Fifth International Conference on Cloud Computing, GRIDs, and Virtualization (CLOUD COMPUTING). Venice, Italy. May 2014.
26. The Fourth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Phoenix, AZ, USA. May 2014.

27. 5th IEEE International Conference on Cloud Computing Technology and Science (CloudCom). Bristol, UK. Dec. 2013.

III.4.2 Technical Referee for International Journals

1. Transactions on Architecture and Code Optimization (TACO), ACM. 1 review since 2017.
2. International Journal of Parallel Programming (IJPP), Springer. 1 review since 2016.
3. Transactions on Circuits and Systems for Video Technology (TCSVT), IEEE. 1 review since 2016.
4. Big Data Research (BDR), Elsevier. 1 review since 2016.
5. Micro, IEEE. 1 review since 2016.
6. Journal of Parallel and Distributed Computing (JPDC), Elsevier. 6 reviews since 2016.
7. Int. Journal of High Performance Computing Applications (IJHPCA), SAGE. 6 reviews since 2015.
8. INFOCOMP Journal of Computer Science. 1 review since 2015.
9. Simulation Modelling Practice and Theory (SIMPAT), Elsevier. 1 review since 2015.
10. Parallel Processing Letters (PPL), World Scientific. 2 reviews since 2013.
11. Transactions on Cloud Computing (TCC), IEEE Computer Society. 10 reviews since 2013.
12. Transact. on Parallel and Distributed Systems (TPDS), IEEE Computer Society. 1 review since 2013.
13. Parallel Computing Journal (ParCo), Elsevier. 5 reviews since 2013.
14. Journal of Automated Software Engineering (JASE), Springer. 1 review since 2012.
15. Future Generation Computer Systems (FGCS), Elsevier. 7 reviews since 2012.
16. Concurrency and Computation: Practice and Experience (CCPE), Wiley. 3 reviews since 2010.

III.4.3 Additional Reviewer for Conferences and Workshops

1. The International Conference for High Performance Computing, Networking, Storage and Analysis (SC). Salt Lake City, UT, USA, Nov. 2016.
2. The 24th International Conference on Parallel Architectures and Compilation Techniques (PACT). San Franciso, CA, USA, Oct. 2015.
3. IEEE Hot Interconnects (HOTI). Santa Clara, CA, USA, Aug. 2015.
4. IEEE International Conference on High Performance Computing (HiPC). Goa, India, Dec. 2014.
5. The International Conference for High Performance Computing, Networking, Storage and Analysis (SC). New Orleans, LA, USA, Nov. 2014.
6. Euro-Par. Aachen, Germany, Aug. 2013.
7. International Supercomputing Conference (ISC). Leipzig, Germany, June 2013.
8. The 13th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid) – Doctoral Symposium. Delft, The Netherlands, May 2013.
9. The Third International Workshop on Accelerators and Hybrid Exascale Systems (AsHES). Boston, MA, USA, May 2013.
10. 22nd International Heterogeneity in Computing Workshop (HCW). Boston, MA, USA, May 2013.
11. International Workshop on Heterogeneous Architectures and Computing (HAC). Leganes, Spain, July 2012.
12. The 14th International Conference on High Performance Computing and Communications (HPCC). Liverpool, UK, June 2012.
13. The Eight International Conference on Parallel Processing and Applied Mathematics (PPAM). Wroclaw, Poland, Sep. 2009.

III.5 Involvement in Standardization Efforts

1. GLT: Generic Lightweight Threads. Kick-off to be proposed in brief.

2. OpenACC: Open Accelerators Organization. To join as BSC representative in 2018.
3. MPI: A Message-Passing Standard, Version 3.1. Message Passing Interface Forum. Releas. June 2015.
4. OpenFabrics Interfaces (OFI) v1.0. Released May 2015.

III.6 Participation in Research Projects

Title: A Method and System for the Realisation of Exascale Computing in Europe (EuroEXA).
Main responsibilities: Drive R&D on MPI communications.
Dates: Sep. 2017 – Mar. 2021.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **PI:** Dr. Paul Carpenter.

Title: European Exascale Processor & Memory Node Design (ExaNoDe).
Main responsibilities: Drive R&D on MPI communications.
Dates: Jan. 2017 – Sep. 2018.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **PI:** Dr. Paul Carpenter.

Title: Human Brain Project (HBP)
Main responsibilities: Supervise R&D on GPU development.
Dates: Since Sep. 2016.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **PI:** Dr. Raül Sirvent.

Title: BSC/UPC NVIDIA GPU Center of Excellence (GCoE).
Main responsibilities: Manager of this center of excellence.
Dates: Since Mar. 2016.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Manager. **Responsible:** Prof. Mateo Valero.

Title: Intel-BSC Exascale Laboratory.
Main responsibilities: R&D in data placement for heterogeneous memory systems.
Dates: Since Sep. 2015.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **Responsible:** Prof. Jesús Labarta.

Title: INTERTWine.
Main responsibilities: R&D in MPI malleability.
Dates: Since Sep. 2015 – June 2017.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **Responsible:** Prof. Xavier Martorell.

Title: Use of the Folding profiler to assist on data distribution for heterogeneous memory systems.
Main responsibilities: Project Leader.
Dates: Since Sep. 2015.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **Responsible:** Prof. Jesús Labarta.

Title: Dynamical Exascale Entry Platform – Extended Research (DEEP-ER).
Main responsibilities: R&D in fault-tolerance for the OmpSs offload feature.
Dates: Sep. 2015 – May 2017.
Organization: Computer Sciences Department, Barcelona Supercomputing Center (Spain).
Position: Senior Researcher. **Responsible:** Prof. Xavier Martorell.

Title: Exploring Efficient Data Movement Strategies for Exascale Systems with Deep Memory Hierarchies.
Main responsibilities: To develop models for unified data movement among heterogeneous memory spaces.
Dates: Feb. 2013 – July 2015.
Organization: Mathematics and Computer Science Division, Argonne National Laboratory (USA).
Position: Postdoctoral Appointee. **Responsible:** Dr. Pavan Balaji.

Title: Energy-Aware Sustainable Computing on Future Technology – Paving the Road to Exascale Computing.
Main responsibilities: Study the application and impact of the use of virtualized remote accelerators.
Dates: Jan. 2013 – Feb. 2013.
Organization: Department of Computer Science and Engineering, Universitat Jaume I (Spain).
Position: Researcher. **Responsible:** Prof. Enrique S. Quintana-Ortí.

Title: Real Data Center Cloud Services and Environment.
Main responsibilities: Study of the adequateness and benefits of the application of the remote accelerators.
Dates: Nov. 2012 – Dec. 2012.
Organization: Department of Computer Science and Engineering, Universitat Jaume I (Spain).
Position: Researcher. **Responsible:** Dr. Rafael Mayo.

Title: Heterogeneous Computing Environments for High Performance Dense Linear Algebra on Dedicated Double Precision Hardware Accelerators.
Main responsibilities: Study the application of the rCUDA software to the project.
Dates: Oct. 2012.
Organization: Department of Computer Science and Engineering, Universitat Jaume I (Spain).
Position: Research Fellow. **Responsible:** Prof. Enrique S. Quintana-Ortí.

Title: Server Architectures, Applications and Services.
Main responsibilities: Coordinate and supervise rCUDA development.
Dates: Mar. 2012 – July 2012.
Organization: Department of Computer Engineering (DISCA), Universitat Politècnica de València (Spain).
Position: Research Assistant. **Responsible:** Prof. José F. Duato.

Title: High Performance and High Productivity Computing (HP2C).
Main responsibilities: Characterization of interaccelerator communication over HPC interconnects.
Dates: Sep. 2011 – Dec. 2011.
Organization: Swiss National Supercomputing Centre, ETH Zürich (Switzerland).
Position: Intern. **Supervisor:** Dr. Sadaf Alam.

Title: Extension of the Hypertransport Network Technology for the Enhancement of the Scalability of Internet Severs (PROMETEO/2008/060).
Main responsibilities: Study of the viability of remotely-accelerated architectures as a means of reducing the number of accelerators in a cluster and achieving GPU/node decoupling. Responsible for development of the rCUDA project. Original developer and architect. Development Supervisor from 2011 to 2013.
Dates: Feb. 2009 – Sep. 2011.
Organization: Department of Computer Engineering (DISCA), Universitat Politècnica de València (Spain).
Position: Research Assistant. **Responsible:** Prof. José F. Duato.

Title: Astronomical Activities with Mobility-Disabled Persons.
Main responsibilities: Co-design and development of software for people with mobile disability.
Dates: Nov. 2008 – Dec. 2008.
Organization: Astronomical Observatory, Universitat de València (Spain).
Position: Junior Research Assistant. **Responsible:** Dr. Amelia Ortiz.

Title: Remote Utilization of Robotic Telescopes and Astronomical Cameras on the Aras de los Olmos Observatory for Astronomy and Astrophysics Teaching.
Main responsibilities: Design and development of a remote control telescope interface via Web (teaching-oriented). Automatization of all-sky image capturing process on wide-field cameras.
Dates: Feb. 2008 – July 2008.
Organization: Astronomical Observatory, Universitat de València (Spain).
Position: Collaboration Fellowship. **Responsible:** Prof. Vicent J. Martínez.

Title: Integration of Information Technologies, Localization and Information for the Improvement of the Management Processes and Operations in the Road Freight Transport Sector.
Main responsibilities: Design and development of communication software between onboard device and remote server. Built-in GPS data interpretation. Embedded operating system configuration.
Target company: Castellón Business Association of Freight Transport (ACTM).
Dates: July 2007 – Oct. 2007.
Organization: Department of Computer Science and Engineering, Universitat Jaume I (Spain).
Position: Research Fellowship. **Responsible:** Dr. Germán Fabregat.

Title: Wide-Field Cameras System for Optical Transitory Phenomena, Bolides and Meteors Observation and Study.
Main responsibilities: Design and development of an automatic meteor detection algorithm on all-sky images.
Dates: Nov. 2006 – July 2007.
Organization: Astronomical Observatory, Universitat de València (Spain).
Position: Collaborator. **Responsible:** Prof. Juan Fabregat.

Title: Development of an Electronic Protection Relay.
Main responsibilities: Development of system software and user application for the device, based on a DSP.
Target company: Electrical Technology Institute (ITE).
Dates: July 2006 – Nov. 2006.
Organization: Department of Industrial Systems Engineering and Design, Universitat Jaume I (Spain).
Position: Research Fellowship. **Responsible:** Dr. Enrique F. Belenguer.

III.7 Professional Memberships

1. Full member of HiPEAC since Mar. 2017.
2. IEEE member since 2013. IEEE TCSC member since 2014. IEEE Comp. Society member since 2016.
3. ACM member since 2014.

III.8 Other Activities

1. Member of the BSC Outreach Working Group. Since May 2016.
2. Moderator of the hpc-announce@mcs.anl.gov mailing list from May 2013 to July 2015.
3. Release Manager of MPICH 3.1rc1 (Nov. 2013), 3.1.4 (Feb. 2015), and 3.2b1 (Mar. 2015).

IV. PROFESSIONAL TRAINING AND ADDITIONAL EDUCATION

IV.1 Internships

Type: Graduate.
Center: Swiss National Supercomputing Centre (CSCS), Swiss Federal Institute of Technology (ETH) Zürich.
Main responsibilities: Development of a port for the NetPIPE communication benchmark for the Cray XE6 network. Extension of NetPIPE to characterize accelerator-accelerator communication over high performance interconnects. Early port of LAMMPS to rCUDA. Benchmarking and evaluation of accelerator-based HPC systems. Performance characterization of GPUDirect-RDMA on different cluster configurations.
Supervisor: Dr. Sadaf Alam.
Dates: Sep. 2011 – Dec. 2011 and Oct. 2012.

Type: Undergraduate.
Organization: Innova Advanced Consulting (Spain).
Main responsibilities: Analysis and programming tasks on *Microsoft Business Solutions – Navision.* Eventual consulting and teaching activities.
Dates: July 2005 – May 2006.

IV.2 Former Fellowships

Department: Basic and Clinical Psychology and Psychobiology, Universitat Jaume I (Spain).
Main activities and responsibilities: Changes on the methodology of using The Internet as a self-learning tool. Designed and developed an online practical session.
Dates: Feb. 2004 – July 2004.
Position: Collaboration Fellowship.

IV.3 Languages

1. English. CEFR C2 (Mastery or Proficiency). Official Languages School of Castelló (Spain). Sep 2017.
2. Valencian. CEFR C2 (Mastery or Proficiency). Junta Qualificadora de Coneixements del Valencià, Conselleria de Cultura, Educació i Esport, Generalitat Valenciana. July 2005.

IV.4 Additional Education

IV.4.1 Specific Education for Research on High Performance Computing

1. Programming and Tuning Massively Parallel Systems (PUMPS). Advanced Track. Barcelona, Spain, July 2010.
2. Sixth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES). Terrassa, Spain, July 2010.
3. Fifth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES). Terrassa, Spain, July 2009.

IV.4.2 Higher Education Courses

1. Mobile Devices Programming. Postgraduate Studies and Continuous Education Center, Universitat Jaume I, Spain, Feb. 2006 – May 2006.
2. Voice over IP. Postgraduate Studies and Continuous Education Center, Universitat Jaume I, Spain, Apr. 2006.
3. Computer Vision and Applications. Postgraduate Studies and Continuous Education Center, Universitat Jaume I, Spain, Mar. 2005.