

Full Name: Antonio J. Peña
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I. MAIN ACHIEVEMENTS

Integrated in the OmpSs R&D Team at Barcelona Supercomputing Center. Working on topics related with communications, accelerators, and resilience.

Driven the heterogeneous memory systems research area of the Programming Models and Runtime Systems Research group from the Mathematics and Computer Science Division at Argonne National Laboratory, led by Dr. Pavan Balaji (2012 – 2015).

Integrated in the MPICH R&D Team. MPICH derivatives are the default base MPI implementation in 9 out of the top 10 supercomputers in the most recent TOP500 list (2012 – 2015).

Original Developer and Architect of rCUDA (remote CUDA), a pioneer remote GPGPU (General Purpose Computing on Graphics Processors) virtualization technology (2009 – 2010). After a development team was formed, Development Supervisor (2011 – 2012).

Awards: Extraordinary Doctoral Award (Universitat Jaume I, Sep. 2015), Scale Challenge Finalist (CCGrid 2015), Best Paper (ENERGY 2014), Best Technical Paper (IEEE Cluster 2013).

II. PROFESSIONAL ACTIVITY

Sep. 2015 – Current. Senior Researcher. Computer Science Department, Barcelona Supercomputing Center (Barcelona, Spain).

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

Feb. 2009 – Sep. 2011, and Mar. 2012 – Feb. 2013. Research Assistant and Research Fellow. Department of Computer Engineering, Technical University of Valencia (Spain); and Department of Computer Science and Engineering, Jaume I University (Spain).

Sep. 2011 – Nov. 2011. Graduate Intern. Swiss National Supercomputing Center, ETH Zürich (Lugano, CH).

Dec. 2006 – Jun. 2007, Feb. 2008 – Jul. 2008, and Nov. 2008 – Dec. 2008. Collaborator, Junior Research Assistant, and Collaborator Fellow. Astronomical Observatory, University of Valencia (Spain).

Jul. 2007 – Sep. 2007. Research Fellow. Dept. of Computer Sci. and Engineering, Jaume I University (Spain).

Jul. 2005 – May. 2006. Undergraduate Intern. Innova Advanced Consulting (Castellón, Spain).

Feb. 2004 – Jul. 2004. Collaboration Fellow. Department of Basic and Clinic Psychology and Psychobiology, Jaume I University (Spain).

III. MAIN EDUCATION

PhD in Advanced Computer Systems. “Virtualization of Accelerators in High Performance Clusters”. Jaume I University (Spain). Jan. 2013. Grade: *Cum Laude*. **Extraordinary Doctoral Award**.

Advanced Studies Diploma in Advanced Computer Systems. 2-year Post-Graduate Diploma, MS equivalent. Jaume I University (Spain). Feb. 2010. Grade: A.

Computer Engineering. 5 years, BS + MS equivalent. Jaume I University (Spain). Jul. 2006. Grade: A-.

IV. MAIN SKILLS

Design and development of high-end runtime systems.

High performance and cluster computing, accelerators.

System architectures: heterogeneous memory systems.

Low-level HPC network programming and analysis (IBVerbs, uGNI, Portals4, Libfabric, MXM, OFI).

Low-level and high-level programming (C, C++, Python, shell scripts, etc.).

Team cooperation and coordination.

Languages: native Spanish; fluent written and spoken English and Valencian (with official certifications).

V. ACADEMIC ACTIVITY

- 1 tutorial given at Argonne National Laboratory. June 2015.
- 2 seminars given at Astronomical Observatory – University of Valencia (Spain). Oct. 2012.
- Mentored 8 students since 2011.
- Supervised 2 Final Year Projects at Technical University of Valencia (Spain) in 2012.
- Completed Teacher Training Course. Statistics and Computer Science. Jaume I University (Spain). Mar. 2008.

VI. RESEARCH MERITS

VI.1 Participation in Research Projects

- 15 research projects since 2006 at Barcelona Supercomputing Center (Spain), Argonne National Laboratory (USA), ETH Zürich (Switzerland), Technical University of Valencia (Spain), University of Valencia (Spain), and Jaume I University (Spain).

VI.2 Publications

Citation indices (Google Scholar): Citations: 318; h-index: 9; i10-index: 7.

2 international journals: CCPE, PARCO.

19 international conferences and workshops: SC15, Cluster 2015 (x2), CCGrid 2015 (**scale challenge finalist**), IPDPS 2015, Cluster 2014, P2S2 2014, ICS 2014, ENERGY 2014 (**best paper**), Cluster 2013 (**best technical paper**), EuroMPI 2013, CCGrid 2013, HiPC 2012, CUG 2012, HiPC 2011, ICPP 2011, HPCS 2010, VHPC 2009, and COST IC0804 2009.

10 international oral communications and posters: CCGrid 2015 (Poster), CCGrid 2015 (Poster), JLESC 2014, Cluster 2014, SC12 (Dissertation Research Showcase), ISC'11 (Poster), ACACES 2010 (Poster), LCA-GPGPU-I 2010 (Communication), ACACES 2009 (Poster), and Meteoroids 2007 (Poster).

12 Spanish conferences: JPar 2014, JPar 2014, JPar 2013, JPar 2013, JPar 2012, JPar 2011, JPar 2011, JPar 2010, ANACAP 2009, JPar 2009, ANACAP 2008, and ANACAP 2008.

VI.3 Invited Talks

- 1 talk at SIAM CSE15 (Salt Lake City, UT, USA). Mar. 2015.
- 1 talk at Argonne National Laboratory (Argonne, IL, USA). Oct. 2012.
- 2 keynotes at HPC Advisory Council conferences. Mar. 2012, and Sep. 2012.

VI.4 Organization of Research Activities

SCALE Challenge Co-Chair at CCGrid 2017. Program Co-chair at AsHES 2016. Program Chair at HUCAA 2015. Web Co-chair at IEEE Cluster 2015. Minisymposium Co-organizer at SIAM CSE 2015. Session Chair at P2S2 2014. Publicity Chair at AsHES 2014. Local Organization Committee Volunteer at CEDI 2010.

VI.5 Technical Committees

Technical Program Committee Member in 10 international conferences and workshops: ICCCN 2015, AsHES 2015, CLOUD COMPUTING 2015, ESAA 2014, Cluster 2014, HUCAA 2014, ICCCN 2014, CLOUD COMPUTING 2014, AsHES 2014, and CloudCom 2013.

Technical Referee in 22 international journal papers: IJHPCA, 2015 (x2); INFOCOMP, 2015; FGCS, 2015 (x2); TCC, 2015; CCPE, 2015; SIMPAT, 2015; ParCo, 2015; TCC, 2014; CCPE, 2014; PPL, 2014; FGCS, 2014; PPL, 2013; FGCS, 2013; TCC, 2013; TPDS, 2013; ParCo, 2013; ParCo, 2013; JASE, 2012; FGCS, 2012; and CCPE, 2010.

Additional Reviewer in 12 international conferences and workshops: PACT 2015, HOTI23, HiPC 2014, SC14, Euro-Par 2013, ISC'13, CCGrid 2013, AsHES 2013, HCW 2013, HAC12, HPCC-2012, and PPAM 2009.

VI.6 Other Activities

Actively participated in the MPI 3.1 specifications and OpenFabrics Interfaces (OFI) 1.0. Moderator of the `hpc-announce@mes.anl.gov` mailing list from May 2013 to July 2015. Release Manager of MPICH 3.1rc1, 3.1.4, and 3.2b1. IEEE member since 2013. ACM member since 2014.