

Ginés D. Guerrero

Resume

National Lab for High Performance Computing (NLHPC)
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Personal Details

- Gender** Male.
Birth 28th of August, 1983 (Murcia, Spain).
Citizenship Spanish.

Education

- 2014 **Ph.D. Degree in Computer Engineering**, *University of Murcia, Murcia, Spain.*
Advisors: Dr. José M. García and Dr. José M. Cecilia.
- 2011 **Master degree in New Technologies in Computer Science**, *University of Murcia, Murcia, Spain.*
Master's thesis on "Parallelization of Virtual Screening in Drug Discovery on Massively Parallel Architectures"
Advisors: Dr. José M. García and Dr. Horacio Pérez-Sánchez.
- 2010 **M.S. degree in Computer Science**, *University of Murcia, Murcia, Spain.*
Final Year Project: "Diseño y análisis de un Simulador de Sistemas P en CUDA"
Advisors: Dr. José M. García.

Experience

- 2010–2013 **Technical Researcher**, *at Parallel Computer Architecture Group.*
2010–2013 **Computer Administrator**, *at the Computer Engineering Department.*
2013–
Nowadays **Chief Technology Officer**, *at the National Lab for High Performance Computing.*

Computer Skills

- OS** Gnu/Linux, Solaris, Windows, Mac OS.
- Admin** Apache, Radius, LDAP, SNMP, CACTI, NAGIOS, SGE, cssh, NIS, Bacula, WordPress.
- FS** Samba, NFS, Lustre, Ceph.
- Programing** C/C++, MPI, OpenMP, Java, Cell-SDK, Cell-SuperScalar, CUDA, OpenCL, CORBA, Matlab, Python, Shell Scripting, Javascript.
- BBDD** Access, MySql, Oracle.

Awards

- 2012 **Winner of the Second National Parallel Programming Contest**, Modality, OpenMP+CUDA.
- 2012 **Winner of the Second National Parallel Programming Contest**, Modality, MPI+OpenMP.

Academic Experience

- 2013 **Teaching in Master degree in Bioinformatics**, Subject: High-Performance Computing.

Other Professional Activities

- 2012 **Reviewer for:** *International Conference on Modeling and Applied Simulation*
- 2013 **Reviewer for:** *Journal of Cluster Computing*

Research Projects Participation

- 2008-2011 **“Estrategias de Aplicación de la Virtualización al Entorno de los Supercomputadores”**, Main Coordinator: José Manuel García Carrasco, UMU, Spain, Granted by: Fundación Séneca, 00001/CS/2007.
- 2009-2012 **“Arquitecturas de Servidores, Aplicaciones y Servicios”**, Main Coordinator: José Manuel García Carrasco, UMU, (José Duato, UPV), Spain, Granted by: Spanish MEC, TIN2009-14475-C04.
- 2011-2014 **“Diseño, Evaluación y Explotación de Aplicaciones Biomédicas para Arquitecturas Paralelas de Altas Prestaciones y Bajo Coste”**, Main Coordinator: José Manuel García Carrasco, UMU, Spain, Granted by: Fundación Séneca, 15290/PI/2010.
- 2012-2015 **“Sistemas Heterogéneos Eficientes Energéticamente”**, Main Coordinator: José Manuel García Carrasco, UMU, Spain, Granted by: Spanish MEC, TIN2012-31345.

Publications

Journals

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, and Mario J. Pérez-Jiménez. Simulation of P systems with active membranes on CUDA. *Briefings in Bioinformatics*, 11(3):313–322, May 2010.

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, and Mario J. Pérez-Jiménez. Simulating a P system based efficient solution to SAT by using GPUs. *The Journal of Logic and Algebraic Programming*, 79(6):317–325, 2010.

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Mario J. Pérez-Jiménez, and Manuel Ujaldón. The GPU on the simulation of cellular computing models. *Soft Computing*, 16(2):231–246, February 2012.

José M. Cecilia, José M. García, **Ginés D. Guerrero.**, and Manuel Ujaldón. Evaluating the SAT Problem on P Systems for Different High-Performance Architectures. *The Journal of Supercomputing*, pages 1–25, 2014.

Moisés Hernández, **Ginés D. Guerrero**, José M. Cecilia, José M. García, Alberto Inuggi, Saad Jbabdi, Timothy E. J. Behrens, and Stamatios N. Sotiropoulos. Accelerating Fibre Orientation Estimation from Diffusion Weighted Magnetic Resonance Imaging Using GPUs. *PLoS ONE*, 8(4):e61892, 04 2013.

Ginés D. Guerrero, Juan M. Cebrián, Horacio Pérez-Sánchez, José M. García, Manuel Ujaldón, and José M. Cecilia. Toward Energy Efficiency in Heterogeneous Processors: Findings on Virtual Screening Methods. *Concurrency and Computation: Practice and Experience*, 2013.

Ginés D. Guerrero, José M. Cecilia, Antonio Llanes, José M. García, Martyn Amos, and Manuel Ujaldón. Comparative Evaluation of Platforms for Parallel Ant Colony Optimization. *The Journal of Supercomputing*, pages 1–12, 2014.

Ginés D. Guerrero, Baldomero Imbernón, Horacio Pérez Sánchez, Francisco Sanz, José M. García, and José M. Cecilia. A Performance/Cost Evaluation for a GPU-based Drug Discovery Application on Volunteer Computing. *Journal of Biomedicine and Biotechnology*, 2014. Accepted.

Ginés D. Guerrero, Richard M. Wallace, José L. Vázquez-Poletti, José M. Cecilia, José M. García, Daniel Mozos, and Horacio Pérez-Sánchez. A Performance/Cost Model for a CUDA Drug Discovery Application on Physical and Public Cloud Infrastructures. *Concurrency and Computation: Practice and Experience*, 2013.

Qian Zhang, Junmei Wang, **Ginés D. Guerrero**, José M. Cecilia, José M. García, Youyong Li, Horacio Pérez-Sánchez, and Tingjun Hou. Accelerated Conformational Entropy Calculations Using Graphic Processing Units. *Journal of Chemical Information and Modeling*, 53(8):2057–2064, 2013.

International Conferences

Gregorio Bernabé, **Ginés D. Guerrero**, and Juan Fernández. CUDA and OpenCL implementations of 3D Fast Wavelet Transform. In *IEEE Third Latin American Symposium on Circuits and Systems (LASCAS 2012)*, pages 1–4, Feb 2012.

Juan M. Cebrian, **Ginés D. Guerrero**, and José M. García. Energy Efficiency Analysis of GPUs. In *High-Performance, Power-Aware Computing (HPPAC 2012)*, pages 1008–1016, Shanghai, China, May 2012.

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Mario J. Pérez-Jiménez, and Manuel Ujaldón. P Systems Simulations on Massively Parallel Architectures. *Third International Workshop on Parallel Architectures and Bioinspired Algorithms (WPABA 2010)*, pages 17–26, September 2010.

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Mario J. Pérez-Jiménez, and Manuel Ujaldón. P systems simulations on massively parallel architectures. *Third International Workshop on Parallel Architectures and Bioinspired Algorithms*, pages 17–26, September 2010.

José M. Cecilia, **Ginés D. Guerrero**, José M. García, Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, and Mario J. Pérez-Jiménez. A massively parallel framework using P systems and GPUs. In *Proceedings of the Symposium on Application Accelerators in High Performance Computing (SAAHPC 2009)*, Illinois, USA, July 2009.

José M. Cecilia, **Ginés D. Guerrero**, José M. García, Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, and Mario J. Pérez-Jiménez. Simulation of P Systems with Active Membranes on CUDA. In *Proceedings of 2009 International Workshop on High Performance Computational Systems Biology (HiBi 2009)*, pages 61–70, October 2009.

José M. Cecilia, **Ginés D. Guerrero**, José M. García, Miguel A. Martínez del Amor, Mario J. Pérez-Jiménez, and Manuel Ujaldón. Enhancing the Simulation of P Systems for the SAT Problem on GPUs. In *Proceedings of the Symposium on Application Accelerators in High Performance Computing (SAAHPC 2010)*, Knoxville, USA, July 2010.

José M. Cecilia, José M. García, **Ginés D. Guerrero**, Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, and Mario J. Pérez-Jiménez. Implementing P systems parallelism by means of GPUs. *Lecture Notes in Computer Science*, 5957:227–241, January 2010.

Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, Mario J. Pérez-Jiménez, José M. Cecilia, **Ginés D. Guerrero**, and José M. García. Simulating Active Membrane Systems Using GPUs. *10th Workshop on Membrane Computing*, pages 369–384, August 2009.

Miguel A. Martínez del Amor, Ignacio Pérez-Hurtado, Mario J. Pérez-Jiménez, José M. Cecilia, **Ginés D. Guerrero**, and José M. García. Simulation of Recognizer P Systems by Using manycore GPUs. In *Seventh Brainstorming Week on Membrane Computing*, volume 2, pages 369–384, July 2009.

Moises Hernández, **Ginés D. Guerrero**, José M. Cecilia, José M. García, Alberto Inuggi, and Stamatios N. Sotiropoulos. Accelerating Fibre Orientation Estimation from Diffusion Weighted Magnetic Resonance Imaging Using GPUs. In *Proceedings of the 20th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP 2012)*, pages 622–626, Munich, Germany, 2012.

Horacio Pérez-Sánchez, **Ginés D. Guerrero**, José M. García, Jorge Pena, José M. Cecilia, Gaspar Cano, Sergio Orts-Escolano, and José García Rodríguez. Improving Drug Discovery using a Neural Networks based Parallel Scoring Function. In *International Joint Conference on Neural Networks (IJCNN 2013)*, pages 1–5, 2013.

Irene Sánchez-Linares, Horacio Pérez-Sánchez, **Ginés D. Guerrero**, José M. Cecilia, and José M. García. Accelerating multiple target drug screening on GPUs. In *Proceedings of the 9th International Conference on Computational Methods in Systems Biology (CMSB 2011)*, pages 95–102, New York, NY, USA, 2011.

Ginés D. Guerrero, José M. Cecilia, José M. García, and Horacio Pérez-Sánchez. Impact of Implicit Solvation Models on Database Enrichment in GPU based Blind Virtual Screening. In *International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO 2013)*, pages 731–734, 2013.

Ginés D. Guerrero, Horacio Pérez-Sánchez, Wolfgang Wenzel, José Cecilia, and José García. Effective Parallelization of Non-bonded Interactions Kernel for Virtual Screening on GPUs. In *5th International Conference on Practical Applications of Computational Biology & Bioinformatics (PACBB 2011)*, volume 93, pages 63–69, 2011.

Ginés D. Guerrero, Horacio E. Perez-Sánchez, José M. Cecilia, and José M. García. Parallelization of Virtual Screening in Drug Discovery on Massively Parallel Architectures. In *Proceedings of the 20th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP 2012)*, pages 588–595, Munich, Germany, 2012.

Ginés D. Guerrero, Horacio Pérez Sánchez, Francisco Sanz, and José M. Cecilia. A GPU based Volunteer Computing Platform for the Discovery of Bioactive Compounds. In *Proceedings of International Conference on Computational and Mathematical Methods in Science and Engineering (CMMSE 2013)*, pages 1557–1160, 2013.