Gonzalo Martín

(+34) 656 971 636

gonzalo.mcruz@gmail.com

Madrid, Spain

Personal website

LinkedIn

GitHub

Summary	Software engineer (B.Sc.+M.Sc.) finishing a Ph.D. in computer science with +2 years of experience in software development for large-scale systems and looking for new challenges.
Skills and expertise	**Programming languages** [*Strong knowledge and experience in*] Python, JavaScript, C/C++, Bash scripting, MatLab, SQL (MySQL), LaTeX [*Knowledge of*] Django, NodeJS, jQuery, Objective-C, Java, PHP, HTML, CSS, NoSQL (MongoDB)
	Software OpenStack (cloud computing), Git (distributed version control), Puppet (Automation software)
	Expertise Software development; back-end software development; parallel programming; cloud computing; UNIX systems administration
Experience	**Software Engineer and Research Assistant - Carlos III University - 2010—2013** Research, development, and deployment of the back-end system of a distributed platform for gaming in the cloud. The system was deployed using technologies as OpenStack and Puppet. During this period I started my research on optimization techniques for enhancing the performance and adaptability of MPI applications. I was also involved in the development of EpiGraph, a distributed simulation tool for epidemiological studies.
Education	**Ph.D. in Computer Science - Carlos III University - 2012—May 2014 (expected)** *Optimization Techniques for Adaptability in MPI Applications* My research focus on dynamic parallel MPI applications. I have developed FLEX-MPI, an extension to the MPI library written in C (+10,000 SLOC) for supporting dynamic reconfiguration and dynamic load balancing. Dynamic reconfiguration allows the MPI application to change the number of processes at runtime to cope with varying workloads and changing resources availability thus maximizing resources utilization.
	M.Sc. in Computer Science and Technology - Carlos III University - 2010—2011
	B.Sc. in Computer Science and Engineering - Carlos III University - 2005—2010

Publications   Journal papers

Gonzalo Martín, Maria-Cristina Marinescu, David E. Singh and Jesús Carretero,
"Leveraging social networks for understanding the evolution of epidemics", BMC Systems
Biology, vol. 5, Suppl: 3(14), 2011.

Conference papers

Gonzalo Martín, Maria-Cristina Marinescu, David E. Singh and Jesús Carretero, "FLEX-
MPI: an MPI extension for supporting dynamic load balancing on heterogeneous non-
dedicated systems", in *Euro-Par*, 2013.

Gonzalo Martín, Maria-Cristina Marinescu, David E. Singh and Jesús Carretero, "Parallel
algorithm for simulating the spatial transmission of Influenza in EpiGraph", in *International
Workshop on Parallelism in Bioinformatics - The 20th European MPI Users' Group
Meeting, EuroMPI*, 2013.

Pablo Llopis, **Gonzalo Martín**, Borja Bergua and Jesús Carretero, "Virtual I/O forwarding
for cloud-based HPC applications", in *The 10th International Symposium on Parallel and
Distributed Processing with Applications, ISPA*, 2012.

Gonzalo Martín, Maria-Cristina Marinescu, David E. Singh and Jesús Carretero, "Runtime
support for adaptive resource provisioning in MPI applications", in *The 19th European MPI
Users' Group Meeting, EuroMPI*, 2012.

Gonzalo Martín, Maria-Cristina Marinescu, David E. Singh and Jesús Carretero,
"EpiGraph: A Scalable Simulation Tool for Epidemiological Studies", in *The 2011
International Conference on Bioinformatics and Computational Biology, BIOCOMP'11*, pp.
529-537, 2011.

In review

Gonzalo Martín, David E. Singh, Maria-Cristina Marinescu and Jesús Carretero,
"Enhancing the performance of malleable MPI applications by using performance-aware
dynamic reconfiguration", submitted to Journal of Parallel Computing on February 2014.
In review.

Gonzalo Martín, David E. Singh, Maria-Cristina Marinescu and Jesús Carretero, "Towards
efficient large scale epidemiological simulations in EpiGraph", submitted to Journal of
Parallel Computing—Special Issue: Parallelism in Bioinformatics, on December 2013. In
review.

Collaboration in research projects	NIMBO: Distributed video games - Carlos III University - 2010—2013 Reference: IPT-430000-2010-14 Supported by Spanish Ministry of Science and Education (958,851.76€) The goal of the project was the deployment of a distributed platform for a cloud-based video game system.
Research stay	Computer Architecture research team - Uppsala University - Sweden - 2013 Short-time research stay under the supervision of Dr. David Black-Schaffer. The purpose of this visit was to collaborate in the research of optimization techniques for enhancing the performance of parallel applications which execute on shared-memory processors. Supported by EU COST (European Cooperation in Science and Technology) Action IC0805 - Open Network for High-Performance Computing on Complex Environments. Grant: 1,500 €. Period: May 29, 2013—June 8, 2013.
International summer school	Complex HPC Spring School 2013 - Uppsala University - Sweden - 2013 International summer school for doctoral students in HPC and heterogeneous computing.
Contributions to the scientific community	Reviewer for Journal of Future Generation Computer Systems Reviewer for The 10th International Symposium on Parallel and Distributed Processing with Applications, ISPA Member of the organizing committee of The 20th European MPI Users' Group Meeting, EuroMPI 2013

March 2014.