

DANIEL JOSE CAMPELLO

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Academic Background

- **Florida International University** — Miami, Florida, United States
PhD in Computer Science: August 2010 - present
 - **GPA:** 3.97/4
 - **Advisor:** Raju Rangaswami.
 - **Research:** Operating Systems and Storage Systems.
- **Florida International University** — Miami, Florida, United States
Master of Science in Computer Science: August 2010 - December 2012
 - **GPA:** 3.97/4
- **Universidad Simón Bolívar** — Sartenejas, Venezuela
Bachelor in Computer Engineering: September 2004 - November 2009
 - **GPA:** 4.12/5
 - **Acceptance:** 11th place of 9396 applicants.
 - **Specialization:** Database Modeling and Administration, Algorithm Design.
 - **Electives:** Parallel Algorithms, Cryptography and Data Security, Artificial Intelligence.
 - **Dissertation title (Honorable Mention):** Implementation of a JPEG encoder for *Cell Broadband Engine*.

Interests

- Operating Systems and Storage Systems.
- Development of Parallel Algorithms.
- Systems Administration (GNU/Linux and UNIX).

Publications

- **Non-blocking Writes to File Data**
Daniel Campello, Luis Useche, Hector Lopez, Raju Rangaswami
Under review on the 11th USENIX Symposium on Operating Systems Design and Implementation (OSDI '14), October, 2014.
- **Coriolis: Scalable VM Clustering in Clouds**
Daniel Campello, Carlos Crespo, Akshat Verma, Raju Rangaswami, Praveen Jayachandran
Proceedings of the 10th International Conference on Autonomic Computing (USENIX ICAC '13), June, 2013.
- **Software Persistent Memory**
Jorge Guerra, Leonardo Marmol, Daniel Campello, Carlos Crespo, Raju Rangaswami, Jinpeng Wei
Proceedings of the 2012 USENIX Annual Technical Conference (USENIX ATC '12), June, 2012.

Research Experience

- **Non-blocking Writes**

Writing data asynchronously to an out-of-core page causes the operating system to first synchronously fetch the page into memory before it can be written into. Non-blocking writes eliminates such blocking behavior by buffering the written data temporarily elsewhere in memory and unblocking the writing process immediately.

- **Memory Replication using NFSv4 Multi-write Compound Commands**

We modified the Linux NFSv4 client to be as efficient as possible (in performance and network bandwidth usage) for the use case of small (sub-block) random writes. We use NFS to replicate off-node the transactional changes made by an application in its local memory

- **Scalable VM Clustering in Clouds**

A scalable system that automatically clusters virtual machine images based on content or semantic similarity or a combination of both. Applications of this system can reduce the cost for many management activities in a cluster like migration, system administration, troubleshooting and backup.

- **Software Persistent Memory**

Allows applications to allocate and interact with persistent memory in much the same way as they work with volatile memory by the usage of a simple API.

- **Cooperative CPU Scheduler for Real Time Application in Virtual Machines**

Hierarchical scheduler that enables a communication channel between guest OS and VMM CPU schedulers, allowing them to tune the internal parameters of each other.

- **Implementation of a JPEG encoder for Cell Broadband Engine**

Algorithm to convert images from BMP to JPEG image compression format, leveraging the high performance parallelism available with the Cell Broadband Engine architecture.

Work Experience

- **Florida International University, School of Computer Science** — Miami, FL, United States

Research Assistant: August 2010 - present

- Non-blocking Writes.
- Scalable VM Clustering in Clouds.
- Software Persistent Memory.

- **Fusion-IO, Inc.** — San Jose, CA, United States

Intern, Software System Engineer: May 2014 - present

- Non-Volatile Memory

- **NetApp, Inc.** — Research Triangle Park, NC, United States

ATG Student Intern: May 2013 - August 2013

- Memory Replication using NFSv4 Multi-write Compound Commands

- **Nimble Storage, Inc.** — San Jose, CA, United States

Software Engineer: May 2012 - August 2012

- Compression Algorithms Evaluation, Replacement and Optimization.
- Debugging I/O Performance Degradation while High I/O Request Queue Depth.

- **New Mexico Consortium at Los Alamos National Lab** — Los Alamos, NM, United States

Junior Research Scientist: May 2011 - August 2011

- Software Persistent Memory.

- **Y&V Multi-Tech Consulting Group** — Caracas, Venezuela
UNIX Consultant: January 2010 - April 2010
 - Management Consultant of UNIX and GNU/Linux Systems.
- **Laboratorio Docente de Computación** — USB, Sartenejas, Venezuela
Systems Administrator: January 2007 - December 2009
 - Administration of mail, DNS, web (HTTP and Apache Tomcat), LDAP, CUPS, firewall, NTP, NFS, DHCP, Bacula, Nagios services and others.
 - Management and maintenance of a large number of networked GNU/Linux, Solaris and Windows machines with computer architectures x86, SPARC and Alpha.
 - Update and redesign the official website of the laboratory using PHP and MySQL.
- **Laboratorio BWL** — USB, Sartenejas, Venezuela
Systems Administrator: January 2008 - April 2009
 - Database Administration Oracle 9i and 10g, and MySQL.
 - Administration of GNU/Linux, Solaris 9 and 10 Servers and workstations.

Skills

- **Computer Languages:** C, C++, Java, AWK, bash *shell scripting*, L^AT_EX, PHP, HTML, Ruby, Perl, Haskell, Prolog, JSP, Matlab, PL/SQL, gnuplot.
- **Tools and software:** VIM, Subversion, Mercurial, MySQL, TRAC, Bacula, Nagios, dia, kile.
- **Linux Kernel Development:** Knowledge of VFS, I/O Scheduler, NFS, ext2 FS, CPU Scheduler.
- **Development of Parallel Algorithms:** OpenMPI library and OpenMP for language C. Shared memory parallelism through the use of the *Cell Broadband Engine Architecture*.
- **Operating Systems Administration:** GNU/Linux, FreeBSD, Solaris 9 and 10.
- **Database Administration:** Oracle 9i and 10g, MySQL.

Training Courses

- Oracle Database 10g: Administration Workshop I (40 hours).

Languages

- Spanish (Native Language) and English.

Complementary

- Participated in the X Programming Marathon Computer Engineering – USB, October 2008
- Participated in the IX Programming Marathon Computer Engineering – USB, October 2007