

Alexandre Peixoto Ferreira

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Education

- **PhD in Computer Science** **2004-2009(Dec/09)**
 - University of Pittsburgh
 - Power and thermal management
- **Master in Computer Science** **1996-1998**
 - Universidade Federal de Santa Catarina – Brazil
 - Network Management
- **Bachelor in Electrical Engineering (Electronics)** **1982-1987**
 - Universidade Federal de Brasilia – Brazil
 - Integrated circuits CAD development

Research Interests

- Low power main memory
 - Use of new memory technologies, primarily PCM, to obtain low power and high performance main memory. Architecture and Endurance.
- Systems thermal management
 - Use of thermal modeling as way to detect and mitigate thermal cooling systems failures.
- Systems power management
 - Use of Dynamic Voltage Scaling scheduling in server clusters.
- Computer architecture
 - Development of control mechanisms to reduce power consumption according to programmable policies.
- Member of these research groups:
 - PARTS (Power-Aware Real-Time Systems)
 - RTES (Real-Time Embedded Systems)

Publications

- **Submitted**
 - **A. Ferreira**, S. Bock, B. Childers, R. Melhem, and D. Mossé, Process Variation Impact on PCM Endurance Algorithms, *47th Design Automation Conference (DAC), Anaheim, California, June 2010.*
- **PCM**
 - **A. Ferreira**, M. Zhou, S. Bock, B. Childers, R. Melhem, and D. Mossé, Increasing PCM Main Memory Lifetime, *Design Automation & Test in Europe, Dresden, Germany, March 2010.*
- **Thermal-aware**
 - **A. Ferreira**, D. Mossé and J. C. Oh, "Thermal Faults Modeling using a RC model with an Application to Web Farms", *19th Euromicro Conference on Real-Time Systems (ECRTS 07), Pisa-Italy, July 2007* [[pdf](#)]
- **Power-aware**
 - C. Rusu, **A. Ferreira**, C. Scordino, A. Watson, R. Melhem, and D. Mossé, Energy-Efficient Real-Time Heterogeneous Server Clusters, *IEEE Real-Time*

and Embedded Technology and Applications Symposium (RTAS), San Jose, CA, April 2006

- **Computer Architecture**

- N. AbouGhazaleh, **A. Ferreira**, C. Rusu, R. Xu, B. Childers, R. Melhem, and D. Mossé, "Integrated CPU and L2 cache Voltage Scaling using Machine Learning", *ACM SIGPLAN Languages, Compilers, and Tools for Embedded Systems (LCTES), 2007*[\[pdf\]](#)
- C. Rusu, N. AbouGhazaleh, **A. Ferreira**, R. Xu, B. Childers, R. Melhem, and D. Mossé, "Integrated CPU and L2 cache Frequency/Voltage Scaling using Supervised Learning", *Statistical and Machine learning approaches applied to ARchitectures and compilation (SMART), 2007*.[\[pdf\]](#)

- **Technical Reports**

- **A. Ferreira**, D. Mossé and J. C. Oh, "Thermal-aware Load-distribution for Real-time Server Farms". TR-06-143, Computer Science Dept, University of Pittsburgh [\[pdf\]](#)

Conferences:

- **Tutorials**

- **A. Ferreira**, D. Mossé. "Software Performance in Large Scale Servers". Seventh International Workshop on Software and Performance (WOSP) 2008.

Professional Experience

- **Intel** **2007**

- PhD Internship from 05/2007 to 08/2007.

In this internship, I was involved in the research of the use of PCM as a low power main memory for servers.

- **Brasil Telecom** **2001-2004**

- IT Project Manager

Award received in 2003 for the work performed as project manager and subject matter expert in the development of the system that performs service activation for data communication services, which led to significant corporate savings on service activation tasks. Brasil Telecom is one of the biggest telecommunication companies in Brazil, with more than 10,5 million phones installed and almost 6 thousand employees.

- **TCO IP** **2000-2001**

- Infrastructure Planning Manager

Responsible for new technology prospection and infrastructure planning for the company.

TCOIP was a data communications subsidiary enterprise which became a part of Vivo.

- **Vydia Tecnologia/Figueiredo Ferreira Consul.** **1993-2000**

- Founding Partner and Senior Telecommunication Consultant

Network security and management consultancy. Some of the projects developed: installation, configuration, documentation, management and monitoring of UNIX servers in ECT, the Brazilian Postal Service (771 operation centers), and development of an information network model for TMN (Telecommunications Management Network) applications.

The company developed many projects, most in UNIX software development, systems engineering, LAN design and management. Responsible for the development of several device drivers for telecommunications boards.

- **Telemikro/Telesis**

1988-1993

- Development engineer

Main activities: Specification and development of hardware and software for telecommunications systems.

Technical Skills

- **Computer languages**
 - C, C++, Perl, Java.
- **System administration**
 - Linux, Solaris.

References available upon request