

CURRICULUM VITÆ



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1 Academic Degrees

- 2006** Master of Science in Computer Science and Engineering at Instituto Superior Técnico (IST), Technical University of Lisbon (UTL), January 2006. Specialization area: Connectivity and Distributed Systems. Advisor: Prof. Paulo Ferreira.
- 2001** Bachelor in Information Systems and Computer Engineering at IST/UTL, July 2001. Final grade: 17 out of 20. Undergraduate programme specialization: Architecture and Distributed Systems.

2 Scientific Activity

- 2002/-** Member of the Research Staff of the Distributed Systems Group (GSD) at Instituto de Engenharia de Sistemas e Computadores Investigação e Desenvolvimento (INESC-ID) in Lisbon since September 2002 to date.
- 2001/02** Trainee at GSD, INESC-ID Lisbon from September 2001 to September 2002.

2.1 Publications

2.1.1 Thesis

Policy-Based Object-Oriented Transactional System for Mobile Networks. **Nuno Santos.** MSc Thesis. IST/UTL, Lisbon, January 2006.

Ubiquitous Computing – Supporting Migration and Replication of Objects, **Nuno Santos,** Undergraduate Thesis, IST/UTL, September 2001.

2.1.2 Scientific Communications with Refereeing

Making Distributed Transactions Resilient to Intermittent Network Connections. **Nuno Santos,** Paulo Ferreira. Proceedings of 7th IEEE International Symposium on a World of Wireless Mobile and Multi-

media Networks (WoWMoM'06) (Workshop on Mobile Distributed Transactions), Buffalo-Niagara Falls, New York, June 2006.

Loosely-Coupled, Mobile Replication of Objects with Transactions, Luís Veiga, **Nuno Santos**, Ricardo Lebre, Paulo Ferreira, Proceedings of 10th IEEE International Conference on Parallel and Distributed Systems (ICPADS'04) (Workshop on QoS and Dynamic Systems), New Port Beach, CA, USA, July 2004.

Transaction Policies for Mobile Networks, **Nuno Santos**, Luís Veiga, Paulo Ferreira, Proceedings of 5th IEEE International Workshop on Policies for Distributed Systems and Networks (Policy'04), New York, USA, June 2004.

2.1.3 Technical Reports

Generic Consistency Models Support in Mobihoc, **Nuno Santos**, INESC-ID Tec. Rep. 3/2007, January 2007.

Making Distributed Transactions Resilient to Intermittent Network Connections, **Nuno Santos**, INESC-ID Tec. Rep. 1/2006, January 2006.

Policy-Based Object-Oriented Transactional System for Mobile Network, **Nuno Santos**, Paulo Ferreira, INESC-ID Tec. Rep. 31/2005, December 2005.

2.1.4 Other Publications

FROMAGE - Mobile Agents Platform, **Nuno Santos**, Pedro Dias, Proceedings of 2nd Workshop of Introduction to Autonomous Agents (WIAA'01), Lisbon, March 2001.

2.2 Participation in Scientific Projects

UbiRep

Duration: 2004-2006.

This project aims at supporting data sharing in highly dynamic environments, typically ad-hoc networks, established between people carrying their info-appliances irrespective of the place they are (eg. the hotel lobby, the airport, the restaurant). This project provides the necessary system support, namely, in memory management, data replication and reconciliation mechanisms, as well as novel consistency models. Nuno's participation focused on supporting such requirements for a particular kind of applications – distributed games for ad-hoc networks. A prototype was implemented and a technical report was published. Further results are to be published.

MobileTrans

Duration: 2000-2004.

The contribution of MobileTrans is the design and implementation of a system capable of handling (possibly long running) transactions involving both wired and wireless info-appliances. A fundamental challenge is to understand how much does the classical transactional ACID model can/must be relaxed in order to be most adequate for sharing and collaboration within virtual organizations over wide area networks connecting a variety of distinct devices, from desktops to PDAs. Nuno's participation resulted in the publication of three papers, two technical reports, two prototypes and its Master Thesis.

SmartSketches

Duration: 2000-2003.

SmartSketches is a user-centered approach to introducing computer-based tools in the initial stages of product design. To this end, this project aims at developing innovative multimodal user interfaces combining sketches, gestures and speech among others, to accomplish design tasks in different contexts, ranging from small tablets to large-scale displays and immersive environments. Nuno's participation in this project resulted in the implementation of the *Cali* prototype, a trainable tool for the recognition of gestures and calligraphic sketches. This work was coordinated by Prof. Joaquim Jorge and performed in the Intelligent Interfaces Group.

OBIWAN

Duration: 2000-2003.

The overall objective of this project is the design and implementation of a generic object broker infrastructure that: (i) is well suited to support distributed applications with strong sharing needs, (ii) facilitates application development by releasing programmers from the need to handle complex system issues. OBIWAN supports applications that manipulate an ocean of objects; these objects are scattered over a variety of locations and info-appliances, can flow among such appliances, and contain references connecting them. Nuno's participation in this project consisted on designing and implementing the basic support mechanisms for replication and migration of objects resulting in the publication of its graduation thesis. Based on these results, Nuno also developed a framework for mobile agents, called *Fromage*.

2.3 Prototype Implementations

M-OBIWAN : Luís Veiga, **Nuno Santos**, 2005

Technologies used: .Net Compact Framework, Web Services, C#

MobileTrans - Object Transactional System for Mobile Environments : **Nuno Santos**, 2004-2005.

Technologies used: .Net Framework, Remoting, C#

Trainable Cali - Calligraphic Interfaces : **Nuno Santos**, 2002.

Technologies used: Java, C++

Fromage - Mobile Agents Platform : **Nuno Santos**, 2001.

Technologies used: Java, RMI

2.4 Program Committee Membership

- Policy-based Systems track, International Conference on Systems and Networks Communications (ICSNC 2006), co-sponsored by IEEE France Section, published by IEEE Computer Society Press.

3 Teaching Activity

2002/- Teaching Assistant the Computer Engineering Department (DEI), Technical Superior Institute (IST), Technical University of Lisbon (UTL) since January 2006 to date. Lectured courses:

- Security Algorithms and Applications (Fall 2006)
- Operating Systems (Fall 2002, Fall 2003, Fall 2004, Fall 2005, Fall 2006)
- Frameworks for Distributed Applications in the Internet (Spring 2006)

- Distributed Systems (Spring 2004, Spring 2005)
- Computer Architectures (Spring 2003)

4 Complementary Education

4.1 Participation in Seminars

- *Windows NT/2000: Internal Architecture na Microsoft*, David Solomon, Lisbon, 2000.
- *Creating XML Services with .NET Framework*, Don Box, IST, Lisbon, 3 December 2001.

4.2 Other

- Free Course of History of Science - *The Origins of the Modern Physics*, lectured by Henrique Leitão, Faculty of Sciences, University of Lisbon, 2002.
- Free Course of History of Science - *The History of Science in Portugal and the Scientific Revolution*, lectured by Henrique Leitão, Faculty of Sciences, University of Lisbon, 2006.

5 Prizes and Awards

- *Best Student Award* of Information Systems and Computer Engineering at IST/UTL in the year 2000/01, assigned by Prof. Carlos Matos Ferreira, president of IST/UTL.

6 Other Activities

- Organization Member of *Workshop of Introduction to Autonomous Agents* (WIAA'01), at IST/UTL, March 2001.
- Organization Member of *VIIIª Semana Informática* (SINFO'01), the annual Computer Science Week at IST/UTL, April 2001.

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