DEPARTAMENTO DE INFORMÁTICA

Parallel and Distributed Computing

COMPUTER SYSTEMS

CHi CENTER FOR INFORMATICS AND INFORMATION TECHNOLOGIES

José Cardoso Cunha

**Full Professor, FCT-UNL
Department of Informatics**

Objectives

To promote the development of new abstractions, and support tools enabling the development of parallel and distributed computing applications.

Research dimensions:
• Group-oriented Parallel/Distributed Models
• Autonomic Computing and Scientific Workflows
• Software Environments and Tools for Grid, Cloud and Exascale Computing
• High-Performance Computing and Applications

Methodology

Develop models and tools and implement on parallel and distributed infrastructures:
• Group concepts: address scale, dynamic, and adaptation issues
• Workflow tools for dynamic and large-scale scientific applications, with Luís Assunção
• Abstractions and tools for Grid and Cloud computing
Experimental application case studies:
• Ocean color applications, with Davide D'Alimonte and Tamito Kajiyama
• Statistical-based text mining for large-scale documents, with Carlos Gonçalves and Joaquim Ferreira Silva
• Group applications in social networking platforms, with Carmen Morgado

Expected Results

• Ph.D.theses: 8 completed since 1998; 3 ongoing (expected 2014-2015)
• Experimental development and evaluation of application and tool prototypes

Data Analytics in the Cloud with Flexible MapReduce Workflows, C. Goncalves, L. Assuncao, and J. C. Cunha, *In IEEE 4th International Conference on Cloud Computing Technology and Science (IEEE CloudCom 2012)*
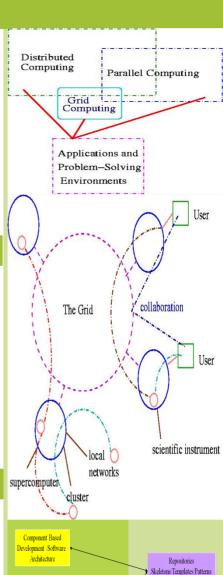
Implicit Groups in Web-based Interactive Applications, M. R. Pais, C. Morgado, J.C.Cunha, *In 3rd Intl. Conference on Computational Aspects of Social Networks (CASON 2011), IEEE Press*

Monte Carlo Code for High Spatial Resolution Ocean Color Simulations D. D'Alimonte, G.Zibordi, T. Kajiyama, J. C. Cunha *In Journal of Applied Optics, Vol 49, No 26, Sept 2010*