

Computer Science Department

Professor

Centro de Inteligência Artificial (CENTRIA)



Pedro Barahona

Former President of

- Computer Science Dept
- CENTRIA
- AIME Society
- APPIA Society

Objectives

My main research interests lie in Artificial Intelligence and its applications, namely in Medicine and Bioinformatics. More specifically my research focuses on Constraint Programming, including constraint-based modelling of problems by different types of constraints, ranging over a variety of domains (reals, finite domains, sets, etc.).

Complementarily, these constraints should be processed efficiently, for which we integrate constraint propagation with machine learning techniques to speed up search, within a platform where the different techniques and domains can be expressed and tested.

Methodology

The above research is included in the "Soft Computing and Constraints" sub-area of CENTRIA, that I lead and promote synergies between the research and researchers in the different topics mentioned. Activity of the group is supported by participation in various projects, nationally and internationally funded, where I often play a responsible role.

To enhance the visibility of the group and its internationalisation publications in leading conferences and scientific journals are promoted, together with the organization of international conferences (e.g. CP 2009) and workshops, as well as the participation in their Programme Committees.

Expected Results

The research on Constraint Propagation and participation in projects in this area should result in scientific publications in leading venues (international conferences and journals – 3 papers were published in the last year in A rated journals).

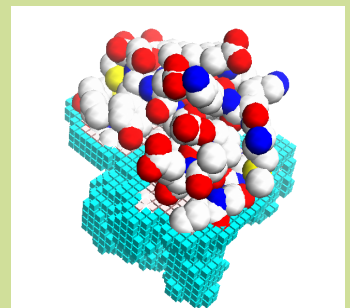
Moreover, we expect to further develop our Constraint Programming platform CaSPER (started with a recent PhD) and apply it to planning and scheduling applications with industrial partners, as well as in other engineering and scientific applications, as those sought of in the currently running projects PROCURE and CREMA.

Funding: Leadership of recently FCT funded projects PRECISE (POSC/EIA/59786/2004) and PRACTIC (POSI/SRI/4196/2001), and the CENTRIA participation in projects ATTEST (CMU-PT/ELE/0009/2009).

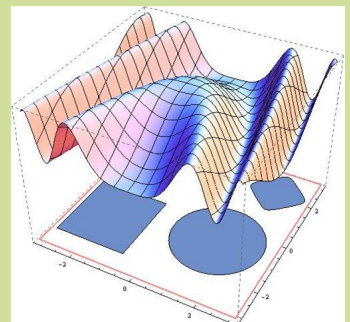
Participation in projects (lead by members of the group) CREMA (PTDC/EIA-CCO/115999/2009) and PROCURE (PTDC/EEI-CTP/1403/2012).

Weekly Schedule							
Worker	Mon	Tue	Wed	Thu	Fri	Sat	Sun
1							
2							
3							
4							
5							
6							
7							
8							
9							

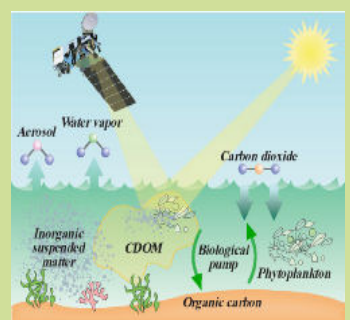
constraint solving



structural bioinformatics



probabilistic reasoning



ocean color remote sensing