



Learning and Intelligent Optimization

12-18 February 2007, Andalo (Trento), Italy

The current explosion in the number and variety of heuristic algorithms for hard optimization problems raises numerous interesting and challenging issues. Practitioners are confronted with the burden of selecting the most appropriate method, in many cases through an expensive algorithm configuration and parameter tuning process, and subject to a steep learning curve. Scientists seek theoretical insights and demand a sound experimental methodology for evaluating algorithms and assessing strengths and weaknesses. A necessary prerequisite for this effort is a clear separation between the algorithm and the experimenter, who, in too many cases, is "in the loop" as a crucial intelligent learning component. Both issues are related to designing and engineering ways of "learning" about the performance of different techniques, and ways of using memory about algorithm behavior in the past to improve performance in the future. Intelligent learning schemes for mining the knowledge obtained from different runs or during a single run can improve the algorithm development and design process and simplify the applications of high-performance optimization methods. Combinations of algorithms can further improve the robustness and performance of the individual components provided that sufficient knowledge of the relationship between problem instance characteristics and algorithm performance is obtained.

This workshop is aimed at exploring the boundaries and uncharted territories between machine learning, artificial intelligence, mathematical programming and algorithms for hard optimization problems. The main purpose of the workshop is to bring together experts from these areas to discuss new ideas and methods, challenges and opportunities in various application areas, general trends and specific developments. To that end, a substantial part of the workshop program will consist of invited presentations, advanced tutorials and discussion sessions.

Steering Committee Chair: Roberto Battiti, University of Trento (Italy)

Conference Chair and Local Chair: Mauro Brunato, University of Trento (Italy)

Technical Program Committee Chair: Holger Hoos, UBC - Vancouver (Canada)

Schedule

Nov 15, 2006 submission deadline

Dec 5, 2006 acceptance decisions

Dec 15, 2006 registration deadline

Please refer to the web site for TPC members and additional information.

(*) Photo courtesy of Parco Naturale Adamello-Brenta (author Franchini Tomas)