Doctoral School of Information and Biomedical Technologies Polish Academy of Sciences

Subject
Multiple criteria analysis for large-scale problems

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Project Description
The project will focus on modeling and development of methods for solving large-scale decision making problems arising in science, business or social life (e.g. health care), in which the game is for achieving goals under limited resources. Solving such problems often requires hybrid approaches coupling exact solution methods with approximate ones. This allows to derive acceptable approximations of optimal solutions under biding limits (time, budget).

As for formal tools, the project will be firmly based on optimization and muliobjective optimization, and as for computation capabilities it will make an extensive use of the recent developments in computing acceleration, in software as well as in hardware.

The range of applications is wide, from micro scale, like efficiency of small enterprises, to stock exchange trading to computing of space aircraft trajectories. Likewise, a natural field of applications are all problems pertaining to sustainable development. The character of the project is general, however, for illustration purposes the results will have to be presented by an example application on a class of practical problems.

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