

PhD project available

School of Engineering and Information Technology,
The University of New South Wales,
Australia, www.unsw.adfa.edu.au



Project Title: Development of optimization methods for concept design

Supervisors: Professor Tapabrata Ray and Dr. Hemant Kumar Singh

Degree: PhD in Mechanical Engineering / Computer Science

Project description:

Concept design requires identification of potential concepts that are subsequently developed in preliminary design phase. Concept and preliminary design phases are known to affect 80% of the life cycle cost of products and this is extremely important to get it right. The concepts are usually characterized using a number of performance measures some of which are in conflict. This necessitates the need for multiobjective optimization and trade-off analysis. While multiobjective optimization is a fairly developed area, solution of optimization problems involving different number of variables (concepts defined using different set of variables) is an open problem.

This research aims to develop optimization methods that can deal with optimization problems involving solutions that are defined using different set of variables. Development of such methods would enable efficient solution of problems encountered in concept design across several domains.

Required Background:

Good programming (Matlab, C/C++) and analytical skills, preferably with a Masters Degree in Engineering / Computer Science. Prior research experience in optimization is desirable but not necessary. Demonstrated competence in academic writing and oral presentation skills will be beneficial. Must meet UNSW admission criteria and English Language requirements.

Expected joining:

At the earliest. Please send scanned copies of transcripts and CV to h.singh@adfa.edu.au

For more information:

About our Multi-disciplinary Design Optimization (MDO) group, please visit our website:
<http://www.mdolab.net/index.html>

About recent work in MaO field, refer to this repository:
http://www.mdolab.net/Resources/mao_repository_main.html