**LECTURE 1: An Overview of Evolutionary Multi-Objective Optimization**

Abstract

Multi-objective optimization refers to solving problems having two or more (often conflicting) objectives at the same time. Such problems are ill-defined and their solution is not a single solution but instead, a set of them, which represent the best possible trade-offs among the objectives. Evolutionary algorithms are particularly suitable for solving multi-objective problems because they are population-based, and require little domain-specific information to conduct the search. Due to these advantages, the development of the so-called multi-objective evolutionary algorithms (MOEAs) has significantly increased in the last 15 years. In this talk, we will provide a general overview of the field, including the main algorithms in current use as well as some of the many applications of them.