

LECTURE 3: Where is the research on evolutionary multi-objective optimization heading to?

Abstract

The first multi-objective evolutionary algorithm was published in 1985. However, it was not until the late 1990s that so-called evolutionary multi-objective optimization began to gain popularity as a research area. Throughout these 36 years, there have been several important advances in the area, including the development of different families of algorithms, test problems, performance indicators, hybrid methods and real-world applications, among many others. In the first part of this talk we will take a quick look at some of these developments, focusing mainly on some of the most important recent achievements. In the second part of the talk, a critical analysis will be made of the by analogy research that has proliferated in recent years in specialized journals and conferences (perhaps as a side effect of the abundance of publications in this area). Much of this research has a very low level of innovation and almost no scientific input, but is backed by a large number of statistical tables and analyses. In the third and final part of the talk, some of the future research challenges for this area, which, after 36 years of existence, is just beginning to mature, will be briefly mentioned.