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Automatic Control and Systems Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

How (not) to design the new best optimisation algorithm every weekend

Dr Manuel López-Ibáñez
Lecturer, Alliance Manchester Business School
University of Manchester

Wednesday, 4 May 2016 at 14:00
LT02, Sir Henry Stephenson Building

Abstract

Metaheuristics, optimisation algorithms without approximation guarantees, are now routinely used to tackle challenging engineering and operations research problems. A prominent class of successful metaheuristics are evolutionary algorithms for multi-objective optimisation problems (MOEAs). A myriad of new metaheuristics are proposed every year claiming to outperform the state of the art in some aspect. The number of "novel" proposals is so large than it has become impossible to tell what is new or what is simply re-branding of previously explored concepts. One may think that having a machine that could automatically generate thousands of novel algorithms will only make matters worse, and wish that such monstrosity would never exist or be acceptable by the research community. Our own work on automatically designing MOEAs shows not only that such a machine is possible, but also that it does design better MOEAs. In this talk, I will argue that we should embrace automatic design since it may be our only hope of refocusing the field towards more productive research.

Biography

Dr. Manuel López-Ibáñez is a Lecturer in the Decision and Cognitive Sciences Research Centre at the Alliance Manchester Business School, University of Manchester, UK. Dr. López-Ibáñez received the Ph.D. degree from Edinburgh Napier University, Edinburgh, UK, in 2009. In 2011, he was awarded a Postdoctoral Fellowship from the Belgian F.R.S.-FNRS to work at IRIDIA, the artificial intelligence laboratory of the Université libre de Bruxelles (ULB), Belgium. He is Programme Co-Chair of PPSN 2016 (http://ppsn2016.org/) and ANTS 2016 (http://iridia.ulb.ac.be/ants2016). His main research interests are the design and experimental analysis of metaheuristics, such as local search, evolutionary algorithms and ant colony optimisation, to optimisation problems, including continuous, combinatorial, and multi-objective problems.

Light refreshments will be served in the
foyer of the Sir Henry Stephenson Building following the seminar