Seminar with SAMAD AHMADI on

Adaptive memory programming for clustering problems

ABSTRACT

Local search algorithms tend to lack an appropriate memory structure to be used in a learning component. This results in missing information about good components of near optimal solutions. We propose a merger of several local search approaches with an adaptive memory programming approach for the Capacitated Clustering problem (CCP). In the CCP, a given set of *n* weighted points is to be partitioned into *p* clusters such that, the total weight of the points in each cluster does not exceed a given cluster capacity. The objective is to find a set of *p* centres that minimises the total scatter of points allocated to these centres. In this talk, we will review some complexity issues, our proposed density constructive method and also a restricted λ-interchange neighbourhood for the CCP. Then ideas of adaptive memory programming and our learning strategy will be explained. Our learning process is kept in charge of tracking information on the best components in an elite set of solutions. The information is strategically combined with problem-domain data in such a way that at early stages of construction, priorities are given to problem-domain data and progressively shifted towards generated information as the learning increases. We will also report the results of our experiments on a standard set of bench-marks from the literature and on a new set of large instances.

ABOUT THE SPEAKER

Dr Ahmadi is a senior lecturer in the school of computing of De Montfort university in Leicester, UK. His first and second degrees are in Mathematics from TTU and Sharif university of Technology in Tehran, Iran and his PhD is in Operational research from Kent University (1998). He worked for 2.5 years at the University of Nottingham as a research fellow on a project for humanising automated scheduling systems. His research interests include location problems, scheduling, timetabling and data mining. He is member of two research groups of Software Technology Research Lab (STRL) and Centre for Computational Intelligence (CCI) and the coordinator of the theoretical foundations of computational intelligence group in CCI. He supervises 5 PhD students in DMU and two PhD students with Nottingham and Sussex universities in different areas of timetabling, use of clustering in web log mining and intelligent systems.

REGISTRATION

Please register at Jeannine.Vannerem@kahosl.be.

Industrieel Ingenieur
KaHo Sint-Lieven

THURSDAY 9 DECEMBER 2004, 16h00 – 17h00
AT KAHO SINT-LIEVEN, CAMPUS RABOT, D021

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