Abstract

Allocation of educators to diverse and rapidly evolving educational programmes of study such as those within Computing and under increasingly tighter budgetary constraints is a non-trivial task. Suitability and availability of expertise coupled with a need to limit disruption to existing teaching assignments can often result in first fit solutions that are less than optimal in terms of suitability. This system is highly sensitive to even small changes, which ripple out through assignments and make it a difficult problem for solution. This paper presents a methodology for profiling programmes of study and, by association, educator expertise that provides a basis for exploring a large number of potential teaching assignments utilising a genetic algorithm. The teaching assignment problem is exponential in problem size and is combinatorially large. Here, a genetic algorithm implementation generates teaching assignments and informs management decision making for continuity planning. The process rapidly achieved very good solutions to a difficult problem, informed scheduling for the coming academic year and determined the acquisition of educators from other areas where local expertise was insufficient for needs.

Refer


**Index Terms**

Computer Science

Artificial Intelligence

**Keywords**

Genetic Algorithm  Heuristic  Teaching Assignment  Combinatorial Optimisation