

# Solving Scheduling Problems in Grid Resource Management Using an Evolutionary Algorithm

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**Abstract.** Evolutionary Algorithms (EA) are well suited for solving optimisation problems, especially NP-complete problems. This paper presents the application of the Evolutionary Algorithm GLEAM (General Learning and Evolutionary Algorithm and Method) in the field of grid computing. Here, grid resources like computing power, software, or storage have to be allocated to jobs that are running in heterogeneous computing environments. The problem is similar to industrial resource scheduling, but has additional characteristics like co-scheduling and a high dynamics within the resource pool and the set of requesting jobs. The paper describes the deployment of GLEAM in the global optimising grid resource broker GORBA (Global Optimising Resource Broker and Allocator) and the first promising results in a grid simulation environment.