

An Algorithm for Optimization of Buffer Allocation in Assembly-like Queueing Systems

Song Yu* Masayoshi Hasama†

Department of Systems Management
Fukuoka Institute of Technology Wajiro-higashi, Higashiku, Fukuoka, Japan 811-0295

Abstract *Assembly operations arise in many practical situations, including assembly lines in production plants, mixing operations in chemical industries and data flow through computer systems. Assembly-like queueing systems are used for modelling such operations. Our interest here stems from the need to solve the resource allocation problems in assembly-like queueing systems. However, there is not an effective technique to solve the optimal allocation problems of queueing networks. In this study, based on the results of computer simulations, we investigate various resource allocations and examine the performance of the systems in terms of throughputs, and present some heuristic policies for effective resource allocation in such systems. Further, we propose an algorithm to maximize the throughput in systems. Numerical tests show the algorithm yields satisfactory results.*

Keywords interactive data mining, multi-dimension data mining, clustering algorithm

*Email: song@fit.ac.jp

†Email: bd03003@ws.ipc.fit.ac.jp