

Dartmouth College

Dartmouth Digital Commons

Dartmouth Scholarship

Faculty Work

10-8-1987

Evaluation of Concurrent Pools

David Kotz

Dartmouth College

Carla Ellis

Duke University

Follow this and additional works at: <https://digitalcommons.dartmouth.edu/facoa>



Part of the [Computer Sciences Commons](#)

Dartmouth Digital Commons Citation

Kotz, David and Ellis, Carla, "Evaluation of Concurrent Pools" (1987). *Dartmouth Scholarship*. 3232.
<https://digitalcommons.dartmouth.edu/facoa/3232>

This Article is brought to you for free and open access by the Faculty Work at Dartmouth Digital Commons. It has been accepted for inclusion in Dartmouth Scholarship by an authorized administrator of Dartmouth Digital Commons. For more information, please contact dartmouthdigitalcommons@groups.dartmouth.edu.

CS-1987-30

Evaluation of Concurrent Pools

David Kotz
Carla Schlatter Ellis

Department of Computer Science
Duke University
Durham, North Carolina 27708-0129

October 8, 1987

Evaluation of Concurrent Pools

David Kotz
Carla Schlatter Ellis

October 8, 1987

Abstract

In a parallel environment, requests for allocation and deallocation of resources or assignment of tasks should be served in a fashion that helps to balance the load and minimize the total parallel runtime. It is important to perform this allocation in a manner that preserves locality and by avoiding remote references (and hence interference with other processes). Concurrent pools, as described by Manber, provide an appropriate data structure for addressing these goals. This paper evaluates the effectiveness of the pool structure under a variety of stressful workloads. It was found that the simpler algorithm than that described by Manber may actually provide better performance.

Please note that this technical report, still available on hardcopy from Duke University, has been published as [KE89].

For more information, write to

Technical Reports
Department of Computer Science
Duke University
Durham, North Carolina 27708-0129
techreports@cs.duke.edu

Errata: Note that there is a typographic error in [KE89], in Figure 7: the labels on the two curves should be interchanged, so that “balanced” labels the top curve, and “unbalanced” labels the bottom curve.

References

- [KE89] David Kotz and Carla Ellis. Evaluation of concurrent pools. In *Proceedings of the Ninth International Conference on Distributed Computer Systems*, pages 378–385, 1989.