

Chapter 4. A Proactive Approach for Dynamic Load Balancing

Overview of idea in general

more info more balancing strategies

detailing the approach for applying in practice

why this can work in current parallel computer archs?

task-based programming model support

different methods for task offloading to balancing the load

4.1. Feedback task offloading

general idea based on reactive load balancing

algorithm for FB task offloading

4.2. ML-based task offloading

4.2.1. Requisite and Design

general idea for ML-based task offloading

different from FB-task offloading

how to define input/output for online load prediction?

how to imagine these operations at runtime?

4.2.2. Online Load Prediction

in detail input/output formulation

example with MxM

example with Samoa2

ML-models

mention online load prediction evaluation

4.2.3. Proactive Task Offloading Algorithm

detail how the algorithm works

example with MxM

task migration strategies

4.3. Co-scheduling tasks across multiple applications

detail how to co-schedule tasks across multi-apps

algorithm

illustration for use case 1

illustration for use case 2

detail

detail

detail