

Genetic Algorithm for Hard Real-time Thermal-aware Scheduling on Hardware Platform

Genetic Algorithm (GA) is derived from theory of evolution and has a distinct advantage with optimization problems. The hard real-time scheduling with thermal-aware can be described as an optimization problem with constraints. The theoretical results show that GA works better than some other known methods. However, we need to prove it with further on hardware platform. The Raspberry Pi with real-time Linux kernel is an ideal choice for this bold experiment.



Fig. 1. Raspberry Pi



Fig. 2. Genetic Algorithm

The project will include following phases:

1. Understand the Real-time Calculus Toolbox
2. Learn Raspberry Pi with real-time kernel
3. Implement the GA schedule and read temperature of CPU
4. Write and conclude the results.

We require the candidate having good programming skills and innovative mind.

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