Assignment 4: Local Search

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1 Introduction

As a point of comparison between my results and others', my testing was done on an Intel Xeon E5620 machine with cores clocked to 2.40GHz. This CPU is somewhere in the neighborhood of 60% as fast as the i7-2600 cores in Searles 224's iMacs, according to benchmarks I found online.

2 Algorithm Variants

2.1 Basic implementation

2.2 Greedy implementation

2.3 Random implementation

2.4 Smarter initial placement

2.5 With restarts

2.6 Random movements

3 Large values

My implementation of the MIN-CONFLICTS algorithm successfully solved the n-queens problem for an n of up to 1000. Here are the n-values, moves and run times for various large values of n I tried:

n-value	moves	run time(sec)
25	28	2.456
50	118	6.715
75	121	20.935
100	188	74.017