B.Tech Summer Research Internship

Mentor : Prof. Nabin Kumar Sahu

Research Topic

Simulated Annealing

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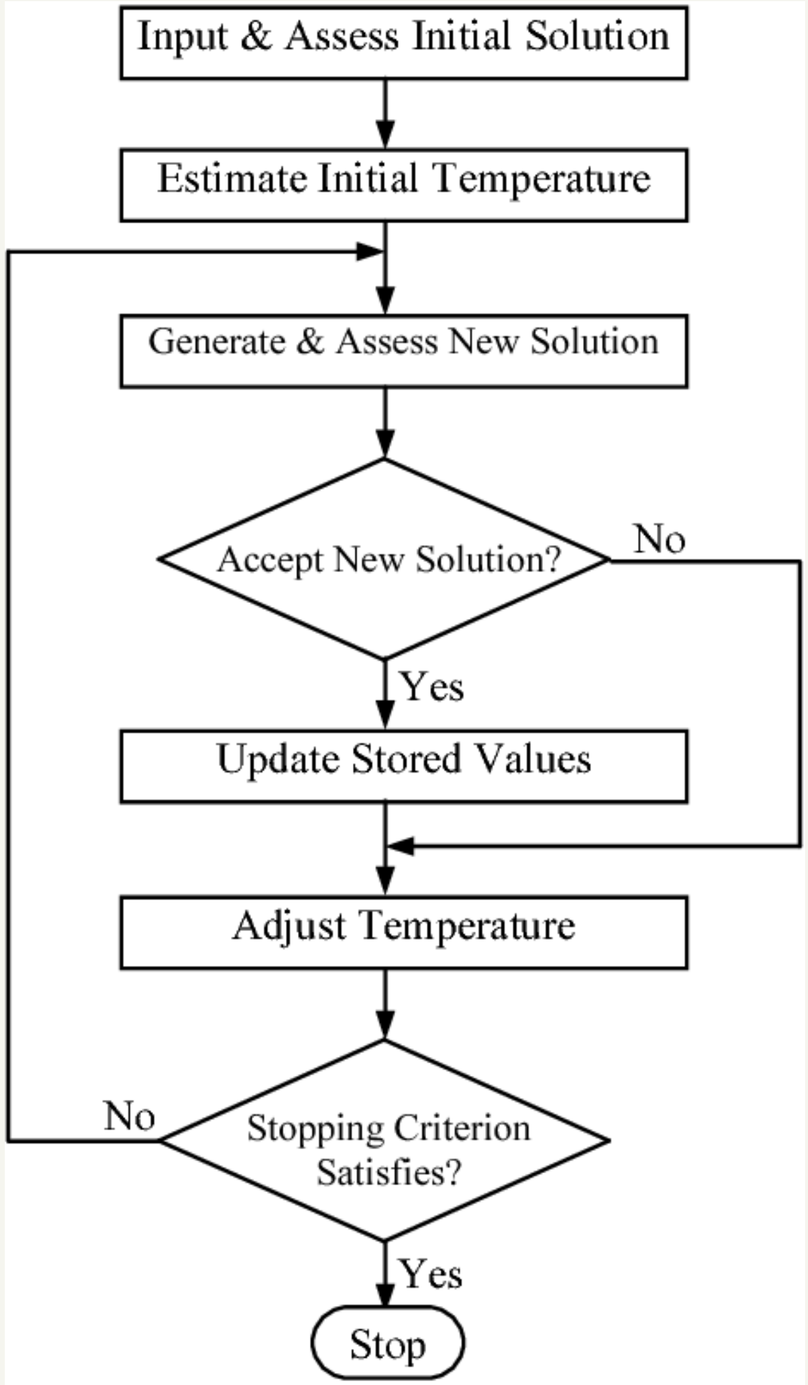
What is Simulated Annealing

Simulated annealing is a well-renowned meta heuristic algorithm employed to address the black box optimization problems related to searching for global optimums.

Physical World Analogy

Physical Annealing is a process in which a crystalline solid is heated and then permitted to cool over a period allowing it achieve its most stable state of lattice configuration devoid of crystalline defects. Larger the cooling period, more superior the final structural integrity results. Simulated annealing incorporates this thermodynamic behaviour into its algorithm for the search of global minima in a discrete optimization problem.

Algorithm for Simulated Annealing



What we have learned?

Python

We fundamentals of python, and further explored various libraries and inbuilt functions

How SA works

We got to learn the functioning and flow of the algorithm of simulated annealing.

SA using python

We learned to successfully implement simulated annealing for a real-life problem using python

What have we done?

Sudoku Solver

We have implemented a working prototype of a suodku solver using python. We employed the approach of Simulated Annealing to formulate an algorithm to solve suodku

Network synthesis problem

Studied a real-world application of Simulated annealing which deals with the problem of finding the best routes in a complex weighted network

Thank You

We are very thankful to Prof. Nabin Kumar Sahu for giving us this opportunity to undergo this summer research internship under his guidance. We learned a lot during these 2 months and for this, we will always be grateful.

Links:

Github Links for our Work:
https://github.com/Jack-2001/Simulated-Annealing.git

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