

Genetic Algorithm :

A genetic algorithm (GA) is a method to solve optimization problems by mimicking natural selection. Here's the process in short:

1. Define the problem: set the function to optimize.
2. Initialise parameters: set population size, mutation/crossover rates and number of generations.
3. Create Initial population: Generate random solutions.
4. Evaluate fitness: Measure how good each solution is.
5. Selection: pick the best solutions for reproduction.
6. Crossover: combine parts of selected solution to create new ones.
7. Mutation: Apply random changes to maintain diversity.
8. Iteration: Repeat the process for multiple generations.
9. Best solution: output the best solution found. This cycle evolves better solutions over time.

Application of EA

1. optimization problems
2. Machine learning
3. Finance
4. Robotics
5. Game development
6. Bioinformatics
7. Art and design
8. Telecommunications
9. production scheduling

Algorithm

- start
- create initial population / define the problem
- calculate fitness score for each individual
- repeat
 - selection
 - crossovers
 - mutation
 - calculating of fitness score
 - until convergence is found
- choose the individual with high fitness value
- stop

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