

Natural Computing

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1 Relevant background material

The Artificial Bee Colony (ABC) algorithm is an optimisation algorithm based on the foraging behaviour of the honeybee swarm.

2 Pseudocode

Algorithm 1 My algorithm

```
1: procedure ABC
2:    $S_n$ : number of food sources
3:   limit: number of trials before abandoning a food source
4:   generations: number of generations
5:    $C_{max}$ : number of cycles
6: begin:
7:   //Initialisation
8:    $num\_eval \leftarrow 0$ 
9:   for  $s \leftarrow 1$  to  $S_N$  do
10:     $X(s) \leftarrow \text{random solution}$ 
11:     $f_s \leftarrow f(X(s))$ 
12:     $trial(s) \leftarrow 0$ 
13:     $num\_eval ++$ 
14:   end for
15:   //Employed bees phase
16:   while  $c < C_{max}$  do
17:     for  $s \leftarrow 1$  to  $S_N$  do
18:        $x' \leftarrow \text{a new solution}$ 
19:     end for
20:   end while
21: end procedure
```

- 3 Natural language description
- 4 Details of experiments
- 5 Overview of results