

人工智能实验报告 LAB6

(2021学年秋季学期)

课程名称: Artificial Intelligence

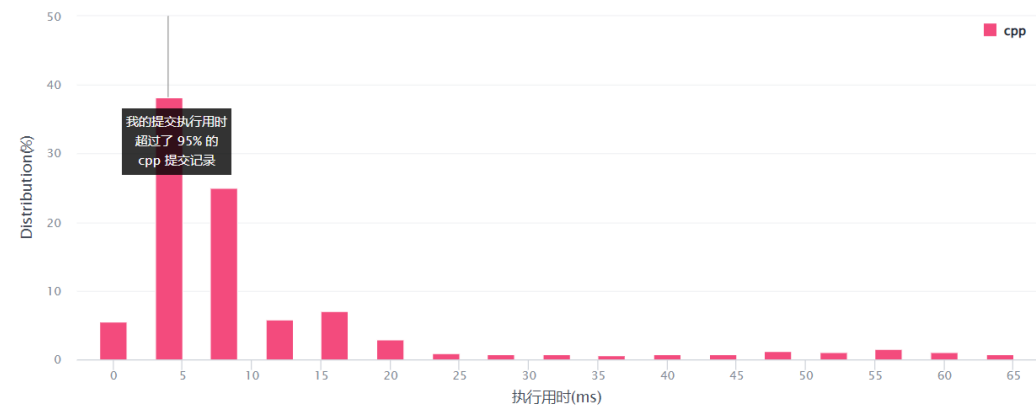
教学班级	计科2班	专业 (方向)	计算机科学与技术
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N 皇后

提交记录

9 / 9 个通过测试用例	状态: 通过
执行用时: 4 ms	提交时间: 几秒前
内存消耗: 7.3 MB	

执行用时分布图表



回溯算法

```
1 class Solution {
2 public:
3     vector<vector<string>> res;
4     vector<vector<string>> solvenQueens(int n) {
5         vector<string> board(n,string(n,'.'));
6         backtrack(board,0);
7         return res;
8     }
9     void backtrack(vector<string>& board, int row) {
10         int n = board.size();
11         if (row == n) {
12             res.push_back(board);
13             return;
14         }
15         for (int col = 0; col < n; ++col) {
16             if (!isValid(board, row, col))
17                 continue;
18             board[row][col] = 'Q';
19             backtrack(board, row+1);
20             board[row][col] = '.';
21         }
22     }
23 }
```

```
22     }
23     bool isValid(vector<string>& board, int row, int col) {
24         int n = board.size();
25         for (int i = row-1; i >= 0; --i)
26             if (board[i][col] == 'Q')
27                 return false;
28         for (int i = row-1, j = col-1; i>=0&& j>=0; --i,--j)
29             if (board[i][j] == 'Q')
30                 return false;
31         for (int i = row-1, j = col+1; i>=0&& j<n; --i,++j)
32             if (board[i][j] == 'Q')
33                 return false;
34         return true;
35     }
36 };
```