

解决 n=10 的 TSP 问题，城市坐标如下：

城市号	横坐标	纵坐标
\overline{A} (1)	0.4000	0.4439
\overline{B} (2)	0.2439	0.1463
\overline{C} (3)	0.1707	0.2293
\overline{D} (4)	0.2293	0.7610
\overline{E} (5)	0.5171	0.9414
\overline{F} (6)	0.8732	0.6536
\overline{G} (7)	0.6878	0.5219
\overline{H} (8)	0.8488	0.3609
\overline{I} (9)	0.6683	0.2536
\overline{J} (10)	0.6195	0.2634

计算可得其最优旅行路线为 A D E F G H I J B C A

且最短总路程为 $l=2.6907$ 。

应用 Hopfield 神经网络对该 TSP 问题求解得，

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Total distance: 2.690670637009414
Desired city sequence: 0=>3=>4=>5=>6=>7=>8=>9=>1=>2=>0
Final permutation matrix
[[1. 0. 0. 0. 0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0. 0. 0. 0. 1.]
 [0. 0. 0. 0. 0. 0. 0. 0. 0. 1.]
 [0. 1. 0. 0. 0. 0. 0. 0. 0. 0.]
 [0. 0. 1. 0. 0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 1. 0. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 1. 0. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 1. 0. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0. 1. 0. 0. 0.]
 [0. 0. 0. 0. 0. 0. 0. 1. 0. 0.]]
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