**AI Assignment report**

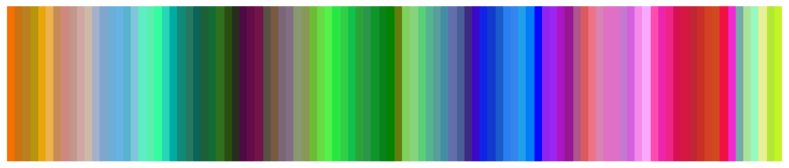
Algorithms measured by finding the average distance between colours in a permutation, the lower the distance the better the solution.

**Constructive heuristic**

**100:**

Average distance 0.1833400219295337

0.020943880081176758 seconds

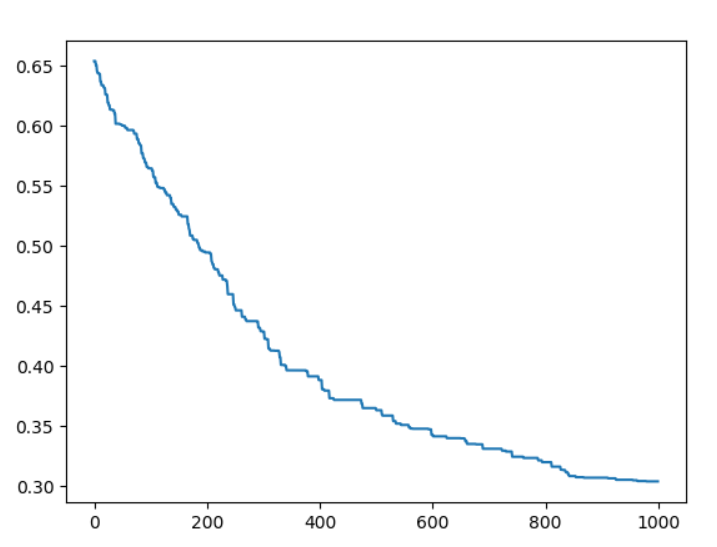


**500:**

Average distance 0.1063649391344048

0.4837076663970947s seconds



**Hill Climber**

The inversion operator is the better mutation algorithm …bunch of shit

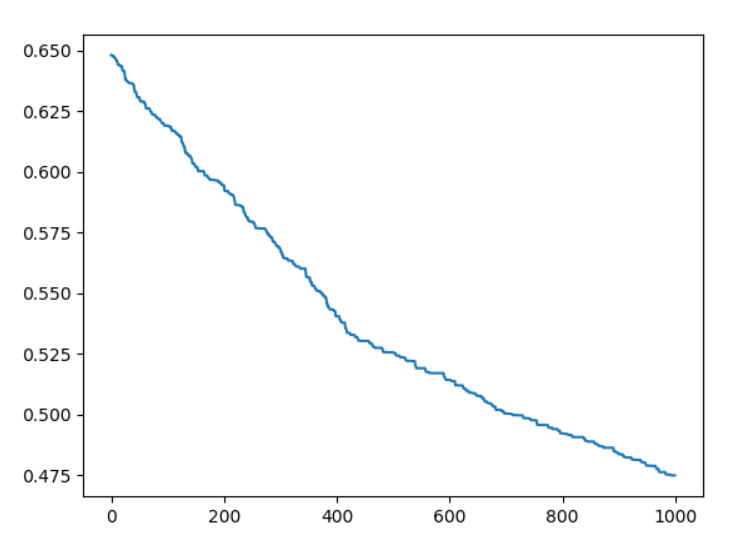
**100:**

Average distance 0.3223631038902211

1.207803726196289s

1000 iterations





**500:**

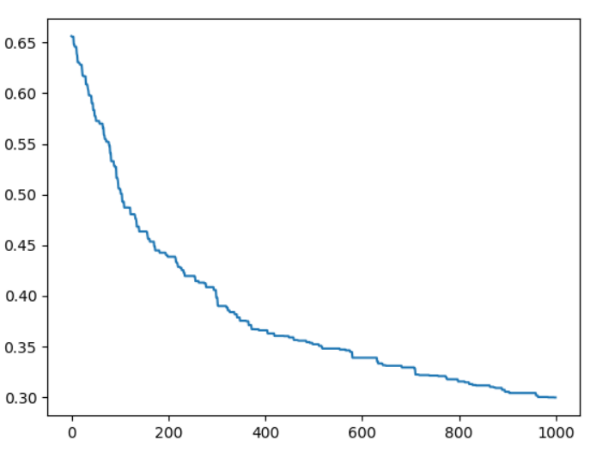
Average distance 0.47484052853844516

6.915482521057129s

1000 iterations



**Multi Start Hill Climber**

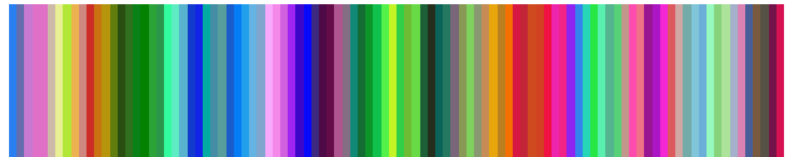
**100:**

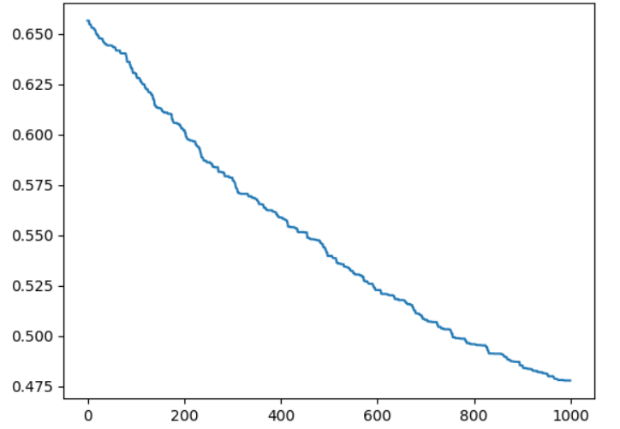
Best permutation average distance: 0.29989182791560176

Time taken: 70.08312511444092s

Mean over 30 tries: 0.3189335216657826

Median over 30 tries: 0.3179469208879595

Standard deviation over 30 tries: 0.009838844322522793



**500:**

Best perm: 0.4564506453358163

Time taken: 368.7297909259796s

Mean over 30 tries: 0.4760381828816253

Median over 30 tries: 0. 47673866165044504

Standard deviation over 30 tries: 0.009247927837358956

