

Neural Gas

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This is a refined write-up of the Neural Gas algorithm. [1]. I believe the algorithm could've been written in a more succinct and mathematically robust manner hence this endeavor.

Neural Gas algorithm

- 1: If we have n input data points, Let inputs be denoted as $v_i \in \mathbb{R}^n$ for $\forall i \in 1, 2, \dots, N$ and codebooks as $w_k \in \mathbb{R}^n$ for $\forall i \in 1, 2, \dots, K$ where $K \leq N$
 - 2: Let a connection matrix $C_{ij(N \times K)}$ be initialized with 0's
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References

- [1] Thomas Martinez and Klaus Schulten. "A "Neural-Gas" Network Learns Topologies". In: *Proceedings of the International Conference on Artificial Neural Networks 1991 (Espoo, Finland)* Amsterdam; New York: North-Holland (1991).