# Article information:

Nonlinear Dimensionality Reduction by Locally Linear Embedding | Science  
<https://www.science.org/doi/abs/10.1126/science.290.5500.2323>

# Article summary:

1. Locally Linear Embedding (LLE) is an unsupervised learning algorithm that reduces high-dimensional data into a single global coordinate system of lower dimensionality.

2. LLE is able to learn the global structure of nonlinear manifolds, such as those generated by images of faces or documents of text.

3. The optimal embedding is found by computing the bottom d + 1 eigenvectors of a symmetric N × N matrix, with the bottom eigenvector discarded to enforce the constraint that the embeddings have zero mean.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides a detailed overview of Locally Linear Embedding (LLE), an unsupervised learning algorithm for reducing high-dimensional data into a single global coordinate system of lower dimensionality. The article explains how LLE can be used to learn the global structure of nonlinear manifolds, such as those generated by images of faces or documents of text, and how it can be used to find the optimal embedding by computing the bottom d + 1 eigenvectors of a symmetric N × N matrix.

The article appears to be reliable and trustworthy in its presentation and explanation of LLE, providing clear explanations and examples for readers to understand how it works and what it can do. The article does not appear to contain any promotional content or partiality towards any particular viewpoint, nor does it appear to present only one side of an argument without exploring counterarguments or missing points of consideration. Furthermore, possible risks associated with using LLE are noted in the article, making it clear that readers should consider these before using this algorithm in their own research or applications.

# Topics for further research:

* Locally Linear Embedding applications
* Locally Linear Embedding performance
* Locally Linear Embedding optimization
* Locally Linear Embedding comparison
* Locally Linear Embedding implementation
* Locally Linear Embedding limitations

# Report location:

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