Combined with a nearest neighbors classifier (KNeighborsClassifier), NCA is attractive for classification because it can naturally handle multi-class problems without any increase in the model size, and does not introduce additional parameters that require fine-tuning by the user.

NCA classification has been shown to work well in practice for data sets of varying size and difficulty. In contrast to related methods such as Linear Discriminant Analysis, NCA does not make any assumptions about the class distributions. The nearest neighbor classification can naturally produce highly irregular decision boundaries.

To use this model for classification, one needs to combine a NeighborhoodComponentsAnalysis instance that learns the optimal transformation with a KNeighborsClassifier instance that performs the classification in the projected space.