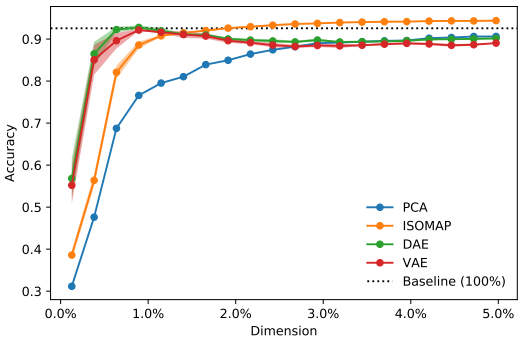
Empirical comparison between autoencoders and traditional dimensionality reduction methods

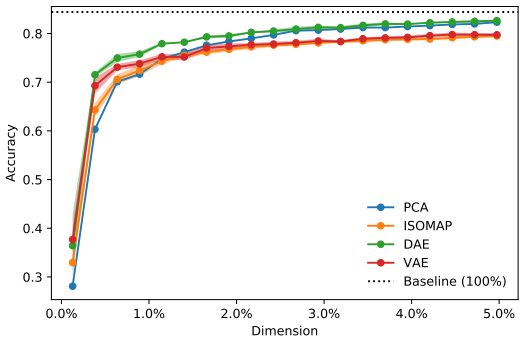
Supplementary material

This supplementary material extends the analysis to different classifiers that were not included in the paper due to page constraints. More specifically, k-NN has been replaced by a logistic regression and a quadratic discriminant analysis (QDA).

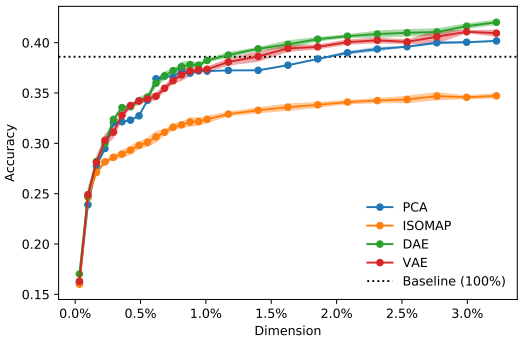
Figures 1 and 2 report the logistic regression accuracy and the QDA accuracy respectively. Figure 3 shows samples from each dataset's classes.



(a) MNIST projection.

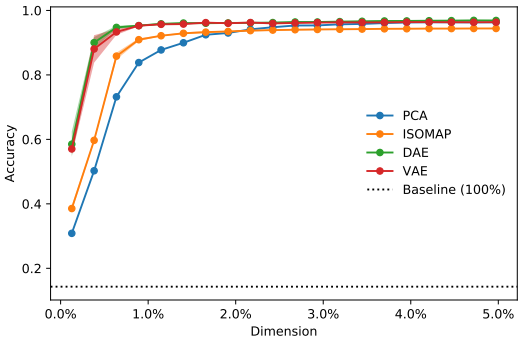


(b) Fashion-MNIST projection.

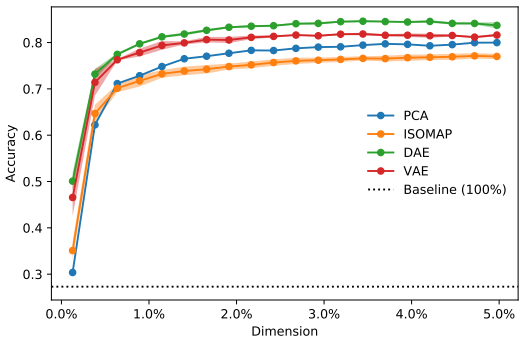


(c) Cifar-10 projection.

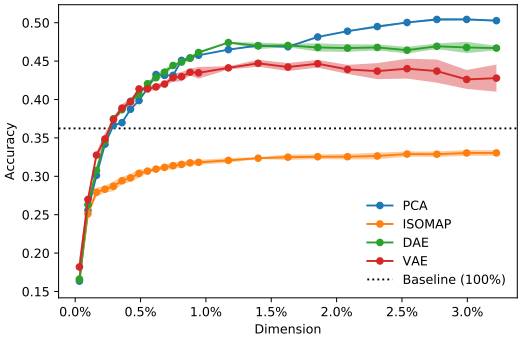
Figure 1: Logistic regression accuracy on each dataset projection as a function of the dimension.



(a) MNIST projection.



(b) Fashion-MNIST projection.



(c) Cifar-10 projection.

Figure 2: QDA accuracy on each dataset projection as a function of the dimension. Note the improvement over the baseline (*ie.* the original dimension).

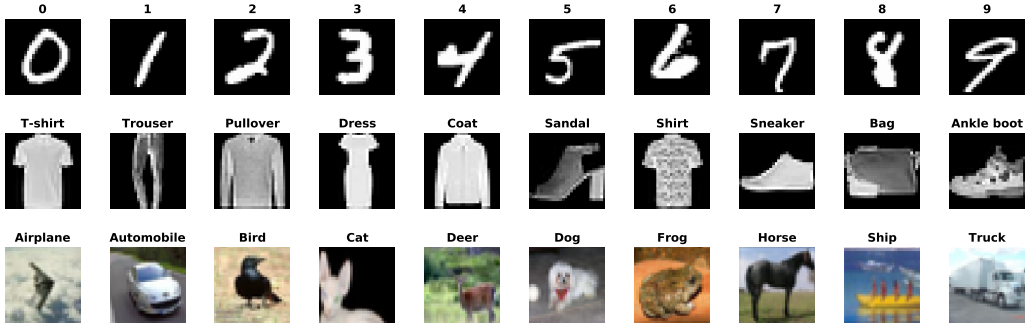


Figure 3: Examples of each class randomly sampled from the test set of each dataset.