Abstract

We investigate the potential of using persistent homology based on curvature filtrated tangent complexes to classify handwritten letters for recognition. Attempting to replicate results from similar studies on a data set of diverse hand-written letters, we employ a variety of methods of pre-processing to arrive at a barcode representation. Through a metric defined on the barcodes, we can then cluster and compare different letters. Unfortunately, with the methods investigated, no combination of parameters and alternative processing steps result in robust classification or even clustering of the hand-written letters in our data set. We provide a full theoretical background as well as openly available implementations of all algorithms tested.