

1145-VN-2337

Warren Keil* (wkeil@uco.edu), 100 N University Dr, Box 129, Edmond, OK 73034, and
Mehmet Emin Aktas (maktas@uco.edu), 100 N University Dr, Box 129, Edmond, OK 73034.
Attributed Network Clustering: A Topological Data Analysis Approach. Preliminary report.

In this paper, we study the attributed networks using topological data analysis. We first extract the ego network of each node. We then define the diffusion Frechet function over ego networks, which takes both network topology and attribute information into consideration, to extract the topological features. Next, we encode this information in persistent diagrams using functional filtrations and finally reach our goal by combining the distances within the persistence diagrams with machine learning algorithms. Our experiment shows that our method can be promising in clustering the attributed networks. (Received September 25, 2018)