TOPOLOGY SEMINAR

Filling Radius and Persistent Homology

By

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Abstract: In this talk, we discuss interesting relations between notions from applied topology and metric geometry in point cloud setting. First, we introduce several notions in both fields to measure the size of a manifold. Then, for a point cloud X in R^n, we relate the life spans of the topological features to their extrinsic and Gromov's filling radius in R^n, and by using this relation, we give bounds for them with Urysohn width. Next, we discuss an interesting relationship between the life spans of the topological features in PD_k(X) in R^n and l^\infty principal components (PCA_\infty) of the point cloud X.

Date: Monday, December 11, 2023
Time: 13:30
Place: SA141 - Mathematics Seminar Room + ZOOM
To request the event link, please send a message to cihan.okay@bilkent.edu.tr