北京理工大学
数学与统计学院学术报告

Statistical Approximation of Persistence Diagrams of Large Datasets via Subsampling (Two Lectures)

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地点： 文萃楼G223(12.23)　文萃楼G221(12.24)

摘要： Persistent homology is infeasible to compute when a dataset is very large. Inspired by the bootstrapping method, Chazal et al. (2014) proposed a multiple subsampling approach to approximate the persistence landscape of a massive dataset. In this talk, I will present an extension of the multiple subsampling method to a broader class of vectorizations of persistence diagrams and to persistence diagrams directly. I will detail the analysis on Hölder continuous vectorizations and address the challenges in applying this method to raw persistence diagrams for two measures of centrality: the mean persistence measure and the Fréchet mean of persistence diagrams. The method is verified through simulation results and real-data applications.

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