

Applied Topology in Albany (ATiA) Seminar

HENRY ASHLEY
SUNY Albany

COMPUTATIONAL COMPLEXITY OF THE INTERLEAVING DISTANCE

Friday, March 06, 2026
12:00 p.m. Hudson 0110

ABSTRACT. This talk discusses the computational complexity of several data structures used in topological data analysis, particularly merge trees and Reeb graphs. I will present proofs by Bjerkevik, Botnan, Dey, Erickson, and others on the computational complexity of the interleaving distance between merge trees and Reeb graphs. It is possible to show via polynomial time reductions that computing the interleaving distance between merge trees and between Reeb graphs is NP-complete, computing isomorphism between Reeb graphs is GI-complete, and computing isomorphism between merge trees can be done in linear time.