

Department of Mathematics, BGU

---

---

# Colloquium

---

---

*On Tuesday, December ,21 2021*

*At 14:30 – 15:30*

*In Math 101-*

Yariv Aizenbud (Yale Univercity)

will talk about

## **Non-Parametric Estimation of Manifolds from Noisy Data**

Abstract: In many data-driven applications, the data follows some geometric structure, and the goal is to recover this structure. In many cases, the observed data is noisy and the recovery task is even more challenging. A common assumption is that the data lies on a low dimensional manifold. Estimating a manifold from noisy samples has proven to be a challenging task. Indeed, even after decades of research, there was no (computationally tractable) algorithm that accurately estimates a manifold from noisy samples with a constant level of noise.

In this talk, we will present a method that estimates a manifold and its tangent. Moreover, we establish convergence rates, which are essentially as good as existing convergence rates for function estimation.