

Topological Data Analysis for Curve Classification. (In Progress)

Fatemeh Razeghi

Universidade de Santiago de Compostela

In this presentation I will show how it is possible to extract topological information from a cloud of points of a metric space by using algebraic topology techniques. In particular, I will introduce you what simplicial complexes are and how to encode a topological space using them. Afterwards, I will explain how to calculate the persistent homology of a filtered simplicial complex and how this technique allows us to convert topological information encoded in a cloud of points into a diagram called persistent diagram and how to this. All of this is included in what is called Topological Data Analysis (TDA).

Finally, I will present how I am using TDA to achieve first goal in my research: to find out if it is possible to distinguish closed curves in \mathbb{R}^3 by applying Topological Data Analysis techniques on a set of random points (plus noise) taken from them. Also I am interested in testing the “limits” of the method

Data: 12 de maio

Lugar: Salón de Graos

Duración: 1 hora

Hora: 17:00 h