

Centro Interdipartimentale SmartData@PoliTO

Marco Guerra 19th December 2018





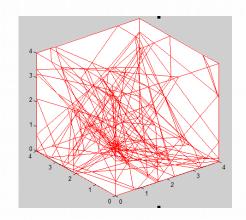
1. Past

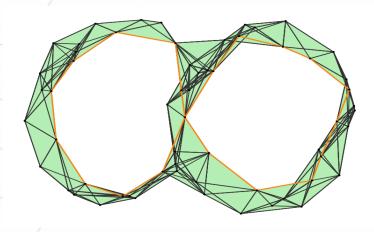




 Bachelor @ PoliTo - Boundary Element Method for 3D PDE problems in complex domains. Prof. Stefano Berrone

$$u(x_0) = -\int_{\partial\Omega} u(x) \frac{\partial}{\partial n(x)} G(x, x_0) dS(x) + \int_{\partial\Omega} G(x, x_0) \frac{\partial}{\partial n(x)} u(x) dS(x)$$





• Master @ PoliTo – Implementation of efficient algorithms for a minimal homology basis in weighted graphs. (Dey et al 2017) Prof. Francesco Vaccarino

$$\dots \xrightarrow{\partial_{k+2}} C_{k+1} \xrightarrow{\partial_{k+1}} C_k \xrightarrow{\partial_k} C_{k-1} \xrightarrow{\partial_{k-1}} \dots$$



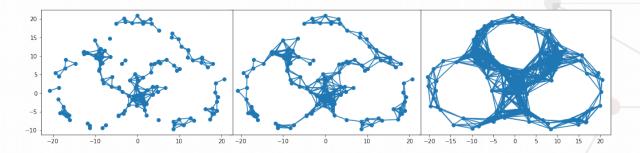
2. Research







 Topological Methods for Data Analysis

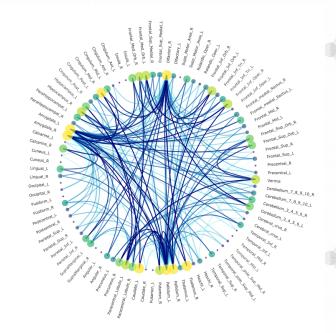


Homological Scaffold - Method of network compression which preserves the cyclic structure (obstructions).

Questions:

Under which hypotheses is the minimal scaffold unique?

For what kinds of network is a cheap scaffold as informative as the minimal one?





3. Interests





