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Monday, May 6th, 2019 14:30

Buzano Room DISMA

Corso Duca degli Abruzzi 24, Torino

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Topological Data Analysis: Application-driven Strategies for Compactness and Efficiency

ABSTRACT

Supported by several applications in a large variety of different domains, Topological Data Analysis along with its most prominent tool, Persistent Homology, is recently proving to be a breakthrough device in the extraction of the core information from large and unorganized datasets. In order to deal with real-world data, crucial aspects to be considered involve the design and the implementations of compact data structures for encoding simplicial complexes as well as the development of efficient strategies for computing the topological invariants characterizing a dataset. In this talk, we will address the topic investigating the latest achievements in this branch of the research.

BIOGRAPHY

Ulderico Fugacci is a postdoc fellow of the Institut für Geometrie group of the Graz University of Technology. His research activity is developed in strictly collaboration with Professor Michal Kerber. Ulderico received a Master Degree in Mathematics from the University of Genova (Italy) in July 2012. In May 2016, he received a PhD in Computer Science at the same university, under the supervision of Prof. Leila De Floriani and Prof. Maria Evelina Rossi. He has been a postdoc fellow at the Department of Computer Science of the University of Maryland (March 2016 - October 2016) and at the Visual Information Analysis group of the Kaiserslautern University of Technology (November 2016 - October 2017).

His interests are in various topics in Algebraic Topology, Computational Geometry and Commutative Algebra. Specifically, he focuses his studies on Topological Data Analysis. <https://fugacci.github.io/home/>

<https://smartdata.polito.it/category/seminars/>

