UNIVERSITÀ DI TRENTO
Dipartimento di Matematica
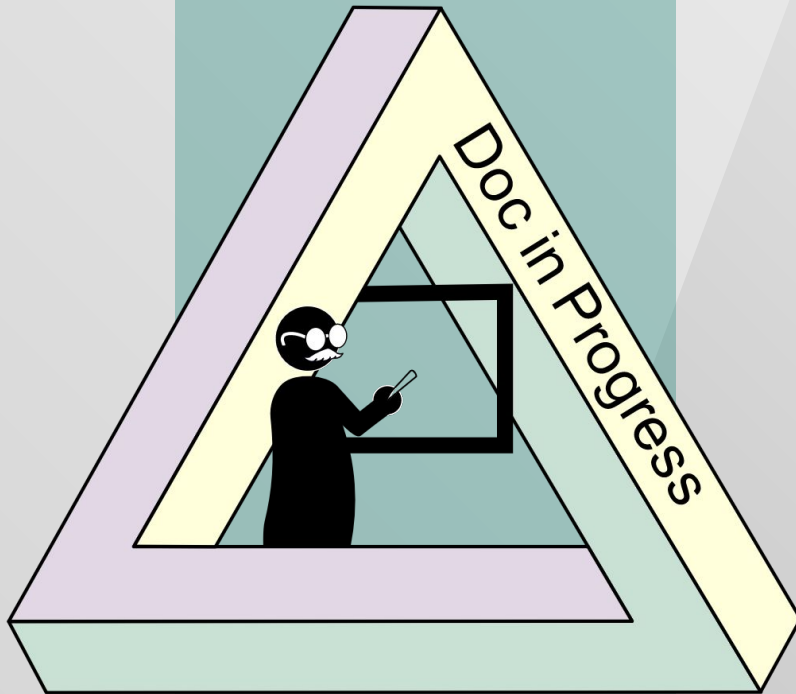
Doc in Progress

PhD in Mathematics

"Doc in Progress" is pleased to introduce you to

Giovanni Bocchi

University of Milano
PhD in Mathematics

Group Equivariant Non Expansive operators: a pathway towards Explainable Machine Learning

Equivariance is by now considered a key property when analyzing data that can undergo geometrical transformations, such as rotations and translations. Starting from this consideration, Group Equivariant Non-Expansive Operators (GENEOs) have been proposed as emerging mathematical tools that can be leveraged to define a new kind of Neural Networks. In this setting, neurons are replaced by parametric families of operators whose equivariance is set with respect to relevant groups of geometrical transformations. Moreover these units can be connected through some admissible operations between GENEOs allowing networks to grow in complexity. The theory of GENEOs guarantees and suggests that such Networks will be able to reach a high degree of explainability, to incorporate any available prior knowledge about the problem and to mitigate the hunger for training data of classical Neural Networks.

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Thursday, March 9, 2023 – 16:00 CET

The seminar will take place in room "Aula Seminari -1" (Department of Mathematics). If needed, please contact docinprogress.unitn@gmail.com using an institutional e-mail address to ask for a Zoom streaming of the event.