**Motivation**

Explainable Artificial Intelligence is rising mainly because traditional techniques of Deep Learning have proved to be deceivable, counterfaiteful and hackable. Reason but also Public Authorities ask for trustworthy methods able to compete with their opaque adversaries.

**GENEOs**

Group Equivariant Non-Expansive Operators are mathematical tools to process data with awareness of some important geometric properties. They can be regarded as observers that extract meaningful information from the data.

**Equivariance**

Equivariance allows to encode in the analysis significant geometrical properties of the data which are known in advance.

**Prior Knowledge**

Apart from equivariance, the specific definition of a GENEO allows to take into account even more prior knowledge.

**Networking**

There is a list of admissible operations that can be applied to a set of GENEOs in order to get new operators (composition, convex combination…). These operations are used to build networks of GENEOs.

**GENEOOnet**

Proof of concept of a GENEO Network for Protein Pocket Detection. It exploits parametric families of GENEOs to build a model that incorporates prior knowledge and encodes equivariance w.r.t. rigid motions of the Euclidean space.

It is **Equivariant** by design

It allows to exploit **prior knowledge**

It has very few trainable parameters: just 17

Due to the architecture: we can assign a clear **meaning** to parameters’ values

Equivariance + few parameters = **reduction of computational costs**

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