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A universal rotation equivariant and permutation invariant neural network architecture

A function is equivariant to a group action if a transformation of the input results in a similar transformation of the input. In this talk, we consider the action of the rotation group on 2D point clouds. Since permutation of the points in a cloud leaves it invariant, this means that we are dealing with functions that are permutation invariant and rotation equivariant. In this talk, we describe a simple neural network architecture which is capable of universally approximating such functions. The talk is based on joint work with Georg Bökman and Fredrik Kahl.