

## Deep learning of diffeomorphisms with application to shape analysis

In this talk we discuss structure preservation and deep learning with applications to shape analysis. This is a framework for treating complex data and obtain metrics on spaces of data. A computationally demanding task for estimating distances between shapes, e.g. in object recognition, is the computation of optimal reparametrizations. This is an optimisation problem on the infinite dimensional group of orientation preserving diffeomorphisms. We present various approaches to discretize this problem.