

Learning spline parameterization for noisy data fitting

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In different application fields related to geometric modeling and data processing, it is common to deal with corrupted data, due to the nature of their generation or collection process. As concerns spline fitting schemes, a necessary preprocessing step, which highly affects the shape and accuracy of the (re-)constructed model, consists in computing the parametric values associated with each input data. We propose a data-driven learning method based on a neural network which takes in input the relative distances of a variable number of data points and returns a suitable parameterization of randomly measured points. Different spline fitting approximation schemes will be considered both for the network design and for the numerical experiments on synthetic and real data configurations.

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