
Machine Learning on Functional Data*

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Abstract

In this presentation we discuss two novel results in functional data analysis. i) We present FuSSO, a functional analogue to the LASSO, which can efficiently find a sparse set of functional input covariates to regress a real-valued response against. ii) We will also discuss a new method for function-to-function regression, when both input covariates and output responses are functions from a nonparametric function class. We analyze the statistical properties of these methods and demonstrate their performance in several real-world problems from cosmology, computer vision, and neuroimaging.