



Accelerated Proximal Gradient Descent in Metric Learning for Kernel Regression

Hector Gonzalez¹
Carlos Morell²
Francesc J. Ferri³

¹Universidad de las Ciencias Informáticas (UCI), Havana, Cuba. hglez@uci.cu

²Universidad Central Marta Abreu (UCLV), Santa Clara, Villa Clara, Cuba. cmorellp@uclv.edu.cu

³Dept. Informática, Universitat de València, València, Spain Francesc. ferri@uv.es

Abstract.

The purpose of this paper is to learn a specific distance function for the Nadayara Watson estimator to be applied as a non-linear classifier. The idea of transforming the predictor variables and learning a kernel function based on Mahalanobis pseudo distance through an low rank structure in the distance function will help us to lead the development of this problem. In context of metric learning for kernel regression, we introduce an Accelerated Proximal Gradient to solve the non-convex optimization problem with better convergence rate than gradient descent. An extensive experiment and the corresponding discussion tries to show that our strategie its a competitive solution in relation to previously proposed approaches. Preliminary results suggest that this line of work can deal with others regularization approach in order to improve the kernel regression problem.

Keywords: Kernel regression, Accelerated proximal gradient, Metric learning, Nadayara watson estimator

Disponible en <https://www.springer.com/gp/book/9783030011314>



Este contenido se publica bajo licencia CC-BY 4.0

