

# Kernel function based interior-point algorithms for symmetric optimization problems

Gyeong-Mi Cho

Department of Software Engineering, Dongseo University, South Korea

gcho@dongseo.ac.kr

It is well known that kernel functions play an important role in design and analysis of interior-point methods (IPMs) since each kernel function defines an interior-point algorithm. In this talk we review kernel function based interior-point algorithms for linear optimization, define new classes of kernel functions and generalize a primal-dual interior-point algorithm for linear optimization to symmetric optimization by using Euclidean Jordan algebras. We show that the algorithms have currently the best known complexity results of large- and small-update methods, respectively, with a specific kernel function.