香港中文大學
The Chinese University of Hong Kong

Institute of Theoretical Computer Science and Communications

ITCSC Theory Talk

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10:30 am – 11:30 am

SHB801, CUHK

Optimal second-order methods are not ``optimal'' in terms of computation

By

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Abstract: Ever since Monteiro and Svaiter proposed NPE and A-NPE framework for solving monotone variational inequalities (MVI) and convex optimization (CO) with near optimal rates at $\epsilon^{-2/3}$ (SIOPT 2012) and $\epsilon^{-2/7}$ (SIOPT 2013) respectively, great many works focus on how to eliminate the logarithmic factors in the upper bounds to make them optimal. In this presentation, we will introduce some novel methods that demonstrate these (near)-optimal methods can be further improved in terms of computation complexity by a factor of d^α, where d is the dimension of the problem, and $\alpha=1/3, 1/7$ for MVI and CO.

Parts of the results are presented at https://arxiv.org/pdf/2410.09568.

******* ALL ARE WELCOME *******