

2019년 제 5회 통계세미나

통계연구소에서는 다음과 같이 통계 세미나를 개최하오니 많은 참여 바랍니다.

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Optimization in high-dimensional statistics with nonconvex constraints

<Abstract>

Many problems in modern statistics can be formulated as an optimization problem with structured constraints, where the constraints often exhibit nonconvexity such as sparsity or low rank. However, working with nonconvex constraints presents theoretical and practical challenges.

We discuss the convergence behavior of two widely used algorithms, projected gradient descent and alternating minimization, in the presence of nonconvex constraints. A major tool for handling nonconvex constraints is the local concavity coefficient, which aims to measure the concavity of a general nonconvex set. In the setting of alternating minimization, our result further reveals an important distinction between alternating and non-alternating methods. We demonstrate our framework on a range of specific examples with rank-constrained variables, including factor model and multitask regression.

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