2021년 제 11회 통계세미나

고려대학교 통계연구소와 BK21 통계학교육연구팀이 다음과 같이
공동으로 세미나를 개최하오니 많은 참여 바랍니다.

일시 : 2021년 10월 29일 (금) 오전 10시
장소 : 온라인(ZOOM)으로 진행
연사 : 신재경 (구자용 교수 연구실 소속)

Penalized additive neural network regression

<Abstract>

In this study, we develop a penalized additive regression estimation method based on a neural network architecture. An additive neural network model is constructed by using a linear combination of univariate neural network structures. We use a B-spline activation function for nodes that constitute the model. A penalty function is adopted to induce sparsity in the functional components and their nodes simultaneously. This enables us to obtain a sparse representation, which in turn improves the accountability of the model. To implement the proposed estimation method, we devise an iterative algorithm based on a coordinate-wise updating process. An initialization scheme specialized for our network based on the B-spline activation function is proposed. Numerical studies show that the fitted functional components of our estimator adapt to local and sparse structures based on a given dataset.

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