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Ultrahigh Dimensional Time Course Feature Selection

Statistical challenges arise from modern biomedical studies that produce time course genomic data with ultrahigh dimensions. We propose a novel GEE-based screening procedure that only pertains to the specifications of the first two marginal moments and a working correlation structure. The newly proposed procedure merely involves making a single evaluation of GEE function and thus effectively reduces the dimensionality of covariates. The new method is robust with respect to the mis-specification of correlation structure and enjoys theoretical readiness, which is further verified via intensive Monte Carlo simulations.