

Testing for Genetic Associations in Arbitrarily Structured Populations

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- Research interest: Statistical genetics and epidemiology, high dimensional data analysis, and dimension reduction

Seminar Information

- **Date:** March 29 (Wed), 2023
- **Time:** 1:00 PM - 2:00 PM in KST
- **Location:** B105
- **Lunch** will be provided.

Abstract

We present a new statistical test of association between a trait and genetic markers, which we theoretically and practically prove to be robust to arbitrarily complex population structure. The statistical test involves a set of parameters that can be directly estimated from large-scale genotyping data, such as those measured in genome-wide associations studies. We also derive a new set of methodologies, called a genotype-conditional association test, shown to provide accurate association tests in populations with complex structures, manifested in both the genetic and non-genetic contributions to the trait. Our proposed framework provides a substantially different approach to the problem from existing methods.