RUTGERS–NEW BRUNSWICK
School of Arts and Sciences

Department of Statistics

Department of Statistics Seminar Series

Hua Zhou
Department of Biostatistics
UCLA

Recent Advances in MM Optimization Algorithms

Wednesday, October 29th, 2025
12:10-1:30 PM
SEC 117

Zoom Meeting: Meeting ID: 983 2864 8232
Password: 665123

https://rutgers.zoom.us/j/98328648232?pwd=gcHifQ9OouKZnUY0EHLe8sjNXaV1oj.1

Light refreshments will be served in Hill 452, 11:40am

Abstract:

The majorization-minimization (MM) principle is an extremely general framework for deriving optimization algorithms. It includes the expectation-maximization (EM) algorithm, proximal gradient algorithm, concave-convex procedure, quadratic lower bound algorithm, and proximal distance algorithm as special cases. Besides numerous applications in statistics, optimization, and imaging, the MM principle finds wide applications in large-scale machine learning problems such as matrix completion, discriminant analysis, and nonnegative matrix factorizations. This talk presents some novel applications of the MM principle in the big data setting, including parallel block least squares, deweighting weighted least squares, large-scale variance component model, independent component analysis, and multi-level Monte Carlo.

Bio:

Dr. Hua Zhou earned his PhD in Statistics from Stanford University. He is currently Professor of Biostatistics at UCLA Fielding School of Public Health, Professor of Computational Medicine at UCLA Geffen School of Medicine, and Director of the Master of Data Science in Health (MDSH) Program. His research spans the areas of optimization, Bayesian computation, neuroimaging, statistical genomics, and stochastic processes. Dr. Hua Zhou oversees multiple National Science Foundation (NSF) and National Institutes of Health (NIH) grants as the Principal Investigator (PI). He serves on the editorial board of major statistical journals such as the Journal of American Statistical Association, Annals of Applied Statistics, and Journal of Computational and Graphical Statistics.