Optimization Program Summer School
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SPEAKER TITLES/ABSTRACTS

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"EM/MM Algorithms and Their Modern Applications"

The expectation-maximization (EM) algorithm, lying at the intersection of statistical inference and optimization, is one of the most cited work in statistical literature. In recent years it has been realized that EM algorithm is a special case of the more general minorization–maximization (MM) principle for optimization. This course will cover (i) basics and history of EM and MM algorithms, (ii) connection with classical optimization algorithms, (iii) convergence theory, (iv) acceleration techniques, and (v) stochastic EM and MM algorithms. The course emphasizes applications to modern high dimensional problems and selected examples are illustrated using the new technical computing language Julia.