We study a statistical method to estimate the optimal value, and the optimality gap of a given solution for stochastic optimization as an assessment of the solution quality. Our approach is based on bootstrap aggregating, or bagging, resampled sample average approximation (SAA). We show how this approach leads to valid statistical confidence bounds for non-smooth optimization, and demonstrate and compare its statistical efficiency and stability with some existing methods. We also present our theory by viewing SAA as a kernel in an infinite-order symmetric statistic, which leads to some generalizations of classical central limit results for SAA.

**BIO:**

Henry Lam is an Associate Professor in the Department of Industrial Engineering and Operations Research in Columbia University. He received his Ph.D. in statistics from Harvard University in 2011, and was on the faculty of Boston University and the University of Michigan before joining Columbia in 2017. Henry's research interests include Monte Carlo simulation, risk and uncertainty quantification, and optimization under uncertainty. His work has been recognized by several venues such as the NSF Career Award (2017) and the INFORMS JFIG Competition Second Prize (2016). He serves on the editorial boards of Operations Research and INFORMS Journal on Computing.