



**Deep Learning Program Opening Workshop
August 12-16, 2019**

SPEAKER TITLES/ABSTRACTS

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“Admissibility of Solution Estimators in Stochastic Optimization”

We consider stochastic optimization problems arising in deep learning and other areas of statistical and machine learning from a statistical decision theory perspective. In particular, we investigate the admissibility (in the sense of decision theory) of the sample average solution estimator. We show that this estimator can be inadmissible in very simple settings, a phenomenon that is derived from the classical James-Stein estimator. However, for many problems of interest, the sample average estimator is indeed admissible. We will end with several open questions in this research direction.