

Quality of Analytics for Machine Learning: Challenges and Approaches  
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Abstract:

Achieving key objectives, like faster serving time, less effort, cheaper operation cost, and higher reliability, is of paramount importance in developing and operating machine learning (ML) systems. Such key objectives can be formulated in the aspect of Quality of Analytics (QoA) in which we can view “analytics”, in a broad sense, as a “workflow” to produce “results” for decision making, such as whether to use a trained ML model for production or an inference/prediction to improve quality of experience in a mobile network. Thus, we can examine QoA for ML from the view of (i) the engineering process, (ii) the artifact as the output of the process, and (iii) the service encapsulating the process/artifact. In this talk, first we will formulate the view of quality of analytics in ML based on ML processes, artifacts and services. Second, we will discuss the challenges and approaches of supporting QoA. To tackle these challenges, we will present two of our current works on QoA for ML service deployment in the edge system and for the quality and cost awareness in federated machine learning marketplaces.